The Builder.

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ILLUSTRATIONS.

Design for Proposed Gallery of British Art.—Mr. Sidney R. J. Smith, Architect ..... *Double-Page Ink-Photo.*
Staircase, 191, Queen's-gate, South Kensington.—Mr. F. G. Knight, Architect ..... *Double-Page Ink-Photo.*
Brasses in Sussex: William Ffienles, Knt., Hurstmonceaux: William de Etchingham, Etchingham.—From rubbings by Dr. Fairbank, F.S.A. ..... *Double-Page Photo-Litho.*
House on Stanmore Park Estate: Messrs. Goddard, Paget, & Goddard, Architects ..... *Single-Page Photo-Litho.*
House, "Mountfield," Chislehurst, Kent.—Mr. W. Harber, Architect ..... *Single-Page Photo-Litho.*

Blocks in Text.

Comparative Outlines of Proposed British Gallery and some Existing Buildings Page 226
Sedan-Chair.—Designed by Robert Adam 227
Proposed Thoroughfare, Strand to Holborn: Plan by Mr. F. M. Simpson .....Page 229
Diagrams in Student's Column: Heating by Hot Water 231

CONTENTS.

The Competition for the Birmingham New General Hospital .. 217
Steam-Rolling on Main Roads 218
Notes 219
Archaic Compared with Archaistic Sculpture 222
Egypt Exploration Fund 224
Demonstrations on Greek Sculpture at the British Museum 225
Architectural Societies 225
Surrey Archæological Society 225
Proposed British Gallery 226
Interior of House, Queen's-gate 226
Two Sussex Brasses 226
House, Stanmore Park Estate 226
Mountfield, Chislehurst, Kent 226
Design for Sedan-Chair 226
London County Council 228
Building Exhibition at Islington 228
Sanitary Inspectors' Association 228
"Proposed Thoroughfare—Strand to Holborn" 229
M. Chipiez's Model of the Parthenon 230
Coke-Breeze Concrete 230
The Royal Commission on Labour 230
Payments on Contract 230
Halifax Model Dwellings Competition 231
Varnish 231
Student's Column.—Warming Buildings by Hot Water, XII. .. 231
Surveyorships 231
Obituary 231
General Building News 232
Stained Glass and Decoration 233
Foreign and Colonial 233
Miscellaneous 233
Meetings 234
Recent Patents 234
Some Recent Sales of Property 235
Prices Current of Materials 235
Tenders 235

The Competition for the Birmingham New General Hospital.

THE insanitary nature of the surroundings of the existing General Hospital at Birmingham has been generally acknowledged, and the removal of the establishment to a more convenient and central site, and at the same time to one that would be more healthy, has occupied the attention of the Hospital authorities for some time. A generous bequest by the late Miss Rylands, of the sum of 25,000*l.*, upon the condition that within five years of her decease proper and permanent accommodation for the whole of the in-patients of the Hospital shall have been provided on a new site, and the liberal donations of the people of Birmingham, have enabled the Committee to take immediate steps to provide the stipulated wards prior to the expiration of the five years, some time in 1894, at an estimated cost for the building of about 80,000*l.* The acquisition of a site that would be suitable for a Hospital, and at the same time central, was no easy task, but it is a matter of congratulation that such a good one has been obtained. The new site lies at the back of the Victoria Law Courts, and is bounded on the south-east by Steelhouse-lane, and on the other sides by Whittall-street, Weaman's-row, and Loveday-street; its shape approaches that of a square, and it has an inclination from south-west to north-west, producing a considerable gradient. A fine open space bounds the site on the north-west. A portion of the site at the corner of Steelhouse-lane and Whittall-street has not yet been acquired, and this has affected the disposition of the buildings. At the present time workshops and small dwellings occupy nearly the whole space, and the removal of these will shortly be commenced.

The engagement of Mr. Alfred Waterhouse, R.A., as consulting architect and assessor insured that the conditions would be as complete and explicit as possible, and that the award would be satisfactory, and one that would be generally endorsed. The accommodation required in the new buildings as scheduled may be briefly summarised thus:—Total number of in-patients 304, of whom 117 will be in two male and two female medical wards of twenty-four beds, and two separation wards to each, and a half-sized twelve-bed ward, and one separate ward to accommodate thirteen children; 156 patients will be provided for in three male and two female surgical wards of twenty-four beds, and two separation wards, each with a half-sized twelve-bed ward, and the separation ward to accommodate thirteen children. In addition to these, eight patients must be provided for in a half-sized ward for six gynæcological cases, with two single-bed separation wards. A half-sized ward for severe burns, to contain twelve beds, and a separation ward, will accommodate thirteen patients, whilst a small ward for septic and delirious cases will accommodate ten more patients, making up the total of 304.

It is stated that seventeen invitations to compete were issued, and that complete sets of designs were received from the following twelve architects:—Mr. W. Henman, Messrs. Worthington & Elgood, Mr. F. B. Osborn, Mr. Brightwen Binyon, Messrs. Dempster & Heaton, Messrs. Dunn & Hipkiss, Messrs. Cossins & Peacock, Mr. W. Doubleday, Mr. William Hale, Messrs. Bateman & Bateman, Mr. Ewen Harper, and Mr. W. H. Bidlake. The report of Mr. Waterhouse was made on Tuesday, March 8, and awarded the first place to Mr. Henman, and the second and third to Messrs. Worthington & Elgood and Mr. F. B. Osborn respectively. The drawings of the whole of the competitors were privately exhibited in one of the reception-rooms of the Council House on Wednesday, Thursday, and Friday of last week. A considerable diversity of opinion appears to have existed in the minds of the competitors as to the proper position for the principal entrance and frontage, and each frontage has found favour with some one or more of the competitors. There are points in favour of each, but we are inclined to think that Mr. Henman has chosen the right position in placing the main entrance in Steelhouse-lane at a point where the roadway is fairly level, and a slight angle occurs in the boundary. Here Mr. Henman has placed his entrance-gates and porter's-lodge leading into a quadrangle, with buildings upon three sides. The end of the administrative block faces the street, and on the left is the building, which contains on the ground floor the board and committee-rooms, and wards above. A covered cloister connects this building and the one on the opposite side, and crosses the front of the administrative block. It was required that one entrance should serve both in and out-patients; that out-patients should have access to the dispensary and thence to the street, and that a separate corridor should allow the in-patients to reach the hospital. This entrance for patients Mr. Henman places on the right-hand side of the entrance quadrangle. The block of buildings at the angle of Steelhouse-lane and Loveday-street accommodates the out-patients' waiting-hall, &c. To briefly explain the disposition of the blocks, it may be stated that a main corridor runs through the centre of each, from south-west to north-east, parallel with Weaman's-row; the nurses' home occupies a separate block facing Whittall-street. The lecture-theatre is at the east-end of the corridor facing Loveday-street. The main corridor passes through the administrative block, and the rest of the wards lead right and left, as will be further explained. The laundry and pathological department occupies a separate building facing Weaman's-row, immediately at the back of the administrative block, and this block has wards on each side of it. A septic ward block also faces Weaman's-row, and is at the end of the gynæcological ward, which will be further described.

The patients' entrance from quadrangle shows a vestibule, with space for splints and ambulance and porter's box on one side, with a consulting-room on the other, to which badly-mutilated cases can be carried without exposure to the gaze of patients in the waiting-hall.

The waiting-hall, which it is intended shall be also occasionally used as a recreation-room, is lighted from a clearstory, and is surrounded by a ring of top-lighted retiring-rooms in connexion with an outer ring of top and side lighted consulting-rooms, with lavatory accommodation. At the west corner of

the hall an exit leads into the quadrangle, and an adjacent door opens into a waiting-room to the dispensary, which occupies a position between this and the administrative block, and is chiefly top-lighted. A separate exit gives out-patients egress into the quadrangle, after calling at the dispensary. A short corridor connects the main corridor and the north end of the hall, and here are placed two wards for noisy patients. This corridor will be used for in-patients, and access to the wards on each floor will be gained by the lift in the administrative block adjacent to the main corridor. The lecture theatre at this end of the corridor has been mentioned. On the opposite side to the waiting-room a corridor leads to a twenty-four-bed male surgical ward block, which overlooks, and is parallel to, Loveday-street. This ward is rectangular in shape, with canted corners. Thirteen beds are placed on each side, with a window on each side of every bed. Angle turrets at the north end, separated from the ward by cross-ventilated lobbies, contain the patients' baths and water-closets, and the turrets are connected on the exterior by a balcony with a north-west aspect. A kitchen and two single-bed wards are placed at the other end of the ward. Continuing down the main corridor, a bath-room and water-closet are found on the right, and then the administrative block is reached. On the north of the corridor dining-rooms for the nurses, servants, and medical officers are placed in close proximity to the lift-room, communicating with the third floor of this block, where the kitchens for the whole establishment are placed. Mr. Henman has made a point of providing only two lifts, side by side, for goods and for patients, in this central position, and has also enclosed these in a service room, which prevents accidents to, and interference from, those using the adjacent corridor. It may be mentioned here that the entrance for goods is in Weaman's-row, and that carts will unload at the basement level of the administrative block, and stores will then be in a convenient position for immediate hoisting by the lift to the third floor kitchen. The upper floors of this administrative block are devoted to the medical officers' quarters in front, and the servants' and matron's quarters at the back. The third floor has the kitchen in front, and the carving and service rooms behind. Following the corridor the central block is reached; the front portion, or that to the south, accommodates board and committee rooms and general offices; these are reached by an entrance from the corridor to the quadrangle, which has been already mentioned, and here a waiting-room for patients' friends is provided adjacent. Above this portion, on the first and second floors, twenty-four-bed female medical wards are placed, with two single-bed wards, and patients' day-rooms at the north end. On the ground floor of this block, to the north of the corridor, two six-bed burn wards are placed, with corridor on the east side, and kitchen and a single-bed ward at the main corridor end; above these wards on the first and second floors are twenty-four-bed female surgical wards, each with two single-bed wards and a secretion-room. On the ground-floor corridor adjacent to this block, a sewing-room, linen and bedding stores are placed, and above this, on the first floor, the patients' chapel appears, with a small vestry. Only one block now remains between the nurses' house and that last mentioned; this has on the south two circular children's wards for twelve beds each, and to the north a six-bed gynæcological ward, with a small, carefully-devised, north-lighted, small operating-room. The main corridor then leads on to the house; but before reaching it, it is widened out into a spacious conservatory, which will serve as a pleasant oasis for the refreshment of nurses who are off duty, and convalescent patients. The main corridor is provided with through ventilation in several positions between the blocks, and, in addition, air space is provided at intervals by arching the wall over the roof of the corridor below. The staircases in this corridor are treated as separate chambers, cut off as much as possible, to prevent unnecessary draught. Two of the staircases have been carried up above the roof, and treated as water-towers. With regard to Mr. Henman's elevations we refrain from naming the style, though we may mention they have been described as free Classic, conceived in a Gothic spirit. They will harmonise well with their near neighbour, the Victoria Law Courts, and a certain impression is somehow conveyed by the design that the work of Mr. Waterhouse has received a certain amount of study. The elevations, however, are distinctly pleasing in their treatment, and there is every reason to expect that they will also look well in execution. The materials intended to be used are red brick and terra-cotta, and green slates.

Messrs. Worthington & Elgood, who have been awarded the second premium of 100*l.*, have adopted a different disposition of their blocks of buildings. Though they have placed the main entrance in Steelhouse-lane, the frontage of the building has been brought out to the street line. A covered carriage-entrance leads to a vestibule, with a short corridor running right and left. On the right the waiting-hall is reached, and around this are arranged the medical and other consulting and retiring rooms. The dispensary occupies a somewhat inconvenient position away from the rest of the building, and the patients who are to be admitted to the hospital from the consulting-rooms will have to retrace their steps against the stream of the incoming patients. On the left of the entrance a corridor runs at right-angles to Steelhouse-lane, and joins the main east and west corridor. The principal staircase is centrally placed at the junction of these two corridors, and communicates with the upper floors of the administrative block, which are arranged as officers' quarters and nurses' home. The kitchens are placed on the third floor. The arrangement of the nurses' home, incorporated with the officers' quarters and the other compartments of the administrative block, does not appear to be a good one. The gynæcological ward is placed in the block which runs back to the centre of Weaman's-row, and on each side are placed smaller blocks containing children's medical wards and wards for severe burns. The surgical and medical wards are placed parallel to, and facing, Loveday-street, and are separated by the main corridor, which terminates in a staircase at each end. The laundry has been placed on the south-west of, but distinct from, the main corridor, and abuts upon the block of old buildings. The number of lifts appears to be excessive. The elevations are treated in a Renaissance style, both Late and Free, and are kept studiously plain. The position of the tower, placed at an angle of the frontage to Steelhouse-lane, does not appear to be a happy one.

The design of Mr. F. B. Osborn, which has gained the third premium of 50*l.* value, differs in many respects from the others. A main corridor runs direct north-west and south-east from the centre of Steelhouse-lane to Weaman's-row. At the corner of the lane and Loveday-street the out-patients' block is placed. This block has a top-lighted waiting-room, surrounded by top-lighted consulting-rooms and retiring-rooms, some of which will necessarily be poorly lighted, owing to the position of the ward above. From this waiting-room a passage on the west leads to a second waiting-room adjoining the dispensary. For the removal of bad cases, a somewhat circuitous corridor leads into the main corridor, and is joined by a shorter corridor from the north side of the waiting-room for out-patients. Once the main corridor is reached, the wards are easily gained by the staircase in the centre or by the lift immediately adjacent thereto. On the south-west of the main corridor facing Steelhouse-lane, the administrative block is placed, and immediately behind this another block accommodates the dining-rooms and the kitchens above. The first and second floors of the administrative block accommodate the quarters of the officers and nurses on duty, and the third floor is devoted to maids' quarters and housekeepers' rooms. On the first floor on the south-east of the main corridor two female surgical wards of twenty-four beds are followed by the gynæcological wards, and the children's ward at the corner of Weaman's-row and Loveday-street. Two female medical wards of twenty-four beds each occupy the north-west, with male medical wards above each. The lecture theatre is placed on the main corridor, opposite the main stairs, and the operating theatre above it. The nurses' house occupies the west corner of the site, and overlooks Weaman's-row and the open space beyond, but this gives a north-west aspect. The elevations show a Renaissance treatment of rather a severe aspect.

Of the remaining designs space prevents any adequate mention, but it may be noted that design No. 4 has the entrance in the centre of Weaman's-row frontage, which is the least accessible to the city. Design No. 3 also favours Weaman's-row for the main entrance, and provides a quadrangle. Design No. 5 places the main entrance in Whittall-street.

The award of the first place to Mr. Henman can be entirely endorsed, though we fail to see sufficient reason for the award of the second premium.

STEAM-ROLLING ON MAIN ROADS.

WE referred some time since* to a report which had been compiled for the County Surveyors' Society by Mr. Heslop, the County Surveyor of Norfolk, and hoped that this might be an annual publication. We are, therefore, pleased to see that this is, to some extent, the case.† But it is only to a certain extent, for the number of County Surveyors who have, in 1891, supplied answers to the questions circulated to them is considerably less than in the previous year,—*e.g.*, in 1890, replies were received from forty-eight counties, against thirty-five in 1891. As there are sixty-three County Council counties in England and Wales, it will, therefore, be seen that Mr. Heslop's report relates to very little more than one-half of this part of the kingdom.

Nevertheless, there is very much in it which is most worthy of careful perusal, as, so far as it goes, it is an indicator, and the only one, of the progress, or the want of it, which is being made in this important branch of public work. Not the least interesting are the replies to the question, "Have you any further information to offer as to cost and desirability of road-rolling by steam or otherwise?" Many of the County Surveyors have either given no reply, or not one of any value, but it appears from the remainder that (*a*) in eleven counties the main roads are now steam-rolled, and that the adoption of this method in those counties meets with general approval; (*b*) in three counties steam-rolling is not yet practised, but is recommended; whilst (*c*), on the other hand, three County Surveyors are doubtful of its advantage, or disapprove of it. These are as follows:—1. Hertford.—"I still think that too much is expected from the use of a steam-roller, and frequently roads made by its use are less able to bear heavy traffic than roads formed without a roller." It is apparent, however, from what this gentleman subsequently adds—"I am, however, going to try the use of steam-rollers and horse-rollers on some of our main roads,"—that his opinion is not based on any experience with respect to the main roads of Hertfordshire, and that he still proposes to experiment with that which has been unanimously condemned, viz., horse-rolling. We beg leave to doubt the value of the evidence on which this opinion about the comparative inability of steam-rolled roads to bear heavy traffic may have been formed.

We will pass on to the report from the North Riding of York. The County Surveyor here says, "I find that steam-rolled roads wear to a very uneven surface, lumpy,

* The *Builder*, May 30, 1891, p. 423.
† Particulars of "Management of Main Roads in England and Wales." 1891.

and full of potholes." The experience of this surveyor is not exceptional, but is generally due, not to the use of the steam-roller, but to carelessness or ignorance in the best mode of applying it, in the arrangement of the metal which has to be so treated, in the want of judgment of the nature and treatment of the subsoil, and in the quantity of water and binding material necessary. Where these points have received the considerable attention which is necessary, the defects above mentioned have disappeared. It is a business which requires to be learned, like all others, and is successful if well done, but not otherwise.

The third case of objection is that of Northamptonshire, whose Surveyor is very decided, as follows: "Nothing further than this, that I will do my best to prevent steam or other rollers being used in my county. Abundant use of the rake, &c., is far better, and considerably more economical, than any roller."

It will be as well before making any further comments on this matter, to quote one or two opinions from other counties, in diametrical opposition to those proceeding from the three counties above named.

Kent.—"Experience proves beyond doubt that the lengths of roads which were rolled last season in those districts where the roller had not been previously used, bear the traffic better than the remainder not so treated, and the general public highly approve of the change."

Westmoreland.—"I am a strong advocate for rolling by steam-power, and think it is in the long run a great saving of cost. In one case, on a heavy-trafficked road, which required metalling every second year, it has stood five years."

Norfolk.—"The two 10-ton rollers worked by me have given every satisfaction, and have effected a considerable saving in labour and materials."

York (West Riding).—"All roads should be rolled by steam-rollers. Horse-rollers are worthless. Having the supervision of 1,000 miles, I am decidedly of this opinion."

The actual cost of steam-rolling is not given in many cases, but is stated to be as follows:—

Cheshire ...	1*l.* per day per roller.
Shropshire.	18s. 8d. ,, ,,
Essex	1d. per yd. super.
Norfolk ...	9d. to 1s. 1d. per yd. cube for granite.
Kent	1s. per yd. cube for flint and limestone.
	1s. 3d. per yd. cube for granite.

There is no doubt that though there are certain limits above and below which the cost of steam-rolling never runs, it is not very easy to generalise.

One of the most complete reports recently made of the cost of steam-rolling has been that made by Mr. Allan Greenwell (the Surveyor of Frome Highway Board) to his Board in Somersetshire. The stone used, 6,000 cubic yards, was nearly all mountain limestone, and the cost was 8·8d., or nearly 9d. per cube yard, or about ½d. per square yard. Each cubic yard sufficed for 17 superficial yards of road. Part of this work was on main and part on district roads, and the work was carried on in the spring and summer. The roller used was 10 ton, with a width of 6 ft. 3 in. He says:—"I believe that at least 25 per cent. of material is saved as compared with stone worked in by the traffic; and, as regards labour, all after-raking is avoided, and scraping is reduced to a minimum. Extraordinary instances in favour of steam-rolling have been furnished by the late severe winter. Materials which were laid in the autumn of 1890, but not rolled, were still unconsolidated in the spring of 1891, and the waste caused by the triturition under the traffic upon the frozen roads was so great as to necessitate a further coating in that year. If this coating had been rolled, it should have lasted three years."

In connexion with this matter the importance of the use of a binding material is also very often overlooked, and it is well to recall the experiences of Mr. Deacon* at Liverpool:—

No. 1. 1,200 superficial yards trap rock took twenty-seven hours to roll and consolidate without any binding.

No. 2. 1,200 superficial yards ditto took eighteen hours to consolidate with trap rock chips from a stone-breaker.

No. 3. 1,200 superficial yards ditto took nine hours to consolidate with a binding composed of one-fourth macadam sweepings, obtained in wet weather, mixed with silicious gravel, from ¾ in. to pin's-head size.

And he reported that No. 3 wore better than No. 2, and No. 2 better than No. 1, whilst the time taken for No. 3 was *one-third* that for No. 1. This points very clearly to the fact that it is an economy, as practised in Monmouthshire and some other parts of the country, to transport binding material as well as metalling on to the roads; and more especially is this the case where inferior metal, such as Kentish rag, is used.

But the point of all others which is to counties the most vital is the establishment of a correct system of management, and, therefore, we have perused with considerable interest the replies which this report supplies to the question, "Do you contract for the entire maintenance of any of your roads?" In analysing these replies, we find that after two years of County Council control, six different methods are at the present time being practised in these thirty-five counties, as follows:—

4 counties, viz., Leicester, Hereford, Northampton, and the North Riding of Yorkshire, contract with Highway Boards.

4 counties, viz., Hants, Oxford, Huntingdon, and the West Riding of Yorkshire work on agreed estimates between Highway Boards and County authorities, the actual cost of the work being paid in some, and perhaps in all, of these cases to the Highway Boards.

2 counties, viz., Salop and Wilts, contract for a portion of the roads with Highway Boards, and place the remainder under the direct control of the County Surveyor.

1 county, viz., Gloucester, contracts for labour only.

1 county, viz., Kent, contracts for the whole, partly with Highway Boards and partly with private contractors.

20 counties are under the direct management of the County Surveyor and his staff, and

3 gave vague or no replies.

35

It will be seen, therefore, how large a proportion have decided to adopt the policy which has on several occasions been advocated in our columns, viz.: the direct control and management of the main roads for the County Councils by an experienced professional man of satisfactory status, in preference to any form of general contract for maintenance.

The systems of Gloucester and Kent are in each case peculiar. In the former the contracts are confined *to labour only*, a method which meets with the decided disapproval of the County Surveyor. The County Surveyor of Kent, on the other hand, says that "the result has been very satisfactory." There seems to be something in connexion with contracts in that county which we do not understand, but it is certainly remarkable for roads to cost over 100*l.* per mile throughout a whole county, even for one in metropolitan proximity, and it must not merely be questionable whether the system in that county is an economical one, but whether the great satisfaction is real or imaginary.

Next to the system of direct control, that of agreement to repay Highway Boards the whole cost of the main roads seems the most sensible one, where those Boards have authority over large areas, or considerable lengths of main roads; but there are these strong objections to it,—firstly, that the Highway Board's surveyor, who executes the work under the County surveyor's specifications, has two masters,—his Highway Board and the County Council,—and, secondly, that one part of his work is paid for out of local rates, whilst the cost of the remainder is covered almost entirely by general taxation. We have treated this branch of the subject at greater length than we should otherwise have done, because we are satisfied that much public money is being wasted or misdirected in those counties where the *direct* system of control of main roads is not in force. There are other matters in Mr. Heslop's Report, especially those connected with footpath responsibility, and the working time of road-men, which merit perusal, and we trust that he will receive general support in the compilation of complete returns from every part of the Kingdom, for the preparation of these annual reports, from which everyone should derive much benefit.

* "Proceedings Inst. C.E.," vol. lviii. p. 18.

NOTES.

WE print in another column a letter which Mr. W. H. White has been commissioned by M. Chipiez to write in answer to our remarks (pp. 114-115 *ante*) in regard to the inaccuracies of the Parthenon model made under his direction. M. Chipiez does not apparently attempt to question our statement as to the inaccuracy of the position of the metope sculptures, but asserts that the Americans must have made a mistake in putting together the model, which was sent over in pieces. As far as the metopes alone are concerned the succession of subjects is arranged, as he says, in accordance with Michaelis; but the series commences at the wrong end of the building; the series is right in itself, but wrong in relation to the pediment sculptures. Whether they were correct in the model as erected at the 1889 Paris Exhibition we cannot say, because though we visited that Exhibition two or three times, the model was not on view there till a late period of the Exhibition, subsequently to our visits. In regard to the entasis of the columns, M. Chipiez states that they were worked according to a photograph which showed fully that degree of entasis. This appears to amount to an admission both that the model was not made from measurements, and that M. Chipiez did, as we said, neglect English data which would have prevented this mistake. Owing to the partial decay of the upper parts of many of the columns, a photograph of the remains does at first sight produce the effect on the eye of a considerable entasis; but we have examined the line of the better preserved columns in a photograph which gives them about 6 in. height, and found the lines absolutely straight with a straight-edge, while a photograph of M. Chipiez' model, making the columns 3¾ in. high, shows a most decided and measurable curve. The actual curve is about half an inch in 31½ ft., which of course could not possibly show on that scale.* M. Chipiez is indignant with us for accusing him of indifference to British sources of information. We may ask him whether it ever occurred to him to test his work by the minute measurements given in Mr. Penrose's book on the Parthenon? If he had availed himself of that source of information as to the actual facts of the Parthenon design, instead of trusting to the general impression conveyed in a photograph, he would have saved himself from a palpable mistake (which he cannot in this case put off on the Americans), and would have been able to say that he had gone to the best source of information within reach, which he has obviously not done.

REPORTS had reached us that the Corporation of Manchester intended to alter the interior of Barry's building, the Royal Institution, in order to obtain more hanging

* We may add that the entasis is equally exaggerated in the model in the British Museum, but that is confessedly a much rougher piece of work.

room for the annual picture exhibitions, but it is only within the last few days that we received the information that the Corporation propose to do this by deliberately destroying the most original and characteristic feature of Barry's interior, viz.: the two colonnaded corridors leading from each side of the gallery of the central hall. It seems almost incredible that such a piece of stupidity should be seriously contemplated, and that too in the name of Art. Barry is our greatest architect since Wren, and his work should in any case be respected; but in this case the feature it is proposed to destroy is one of special elegance and originality. The two small galleries were designed for the exhibition of sculpture, for which they are admirably adapted, while the effect of the vista through them is a charming one, worth in itself a visit to the building. The additional space obtainable for hanging pictures by this piece of architectural destructiveness will be very small, but the important point to be noted is that the Manchester Corporation or their advisers seem totally blind to the fact that architecture is an art as well as painting; that art does not mean pictures (which is the popular idea of the matter) but all forms of artistic expression; that architecture is the monumental and central art on which all the others depend and around which they are grouped, and that to destroy the most artistic feature in the building in order to find more room to hang pictures is the most ludicrously illogical proceeding that can be conceived, and is opposed to common sense as much as to artistic perception. The proposed alteration will rob the building of an area for light and air which is very much wanted, will add very little to the picture-hanging space, and destroy the best feature of the architecture. If it is carried out, it will be a lasting discredit to the Manchester Corporation authorities, in regard to any claims to æsthetic perception, that they should have deliberately spoiled the work of a great architect on such illogical and inadequate grounds. No one has more interest in pictorial art than we have, but the idea that painting is the only art, and that everything else is to give way to hanging pictures, and architecture to be cut up or destroyed at pleasure with this object, is the idea only of people who are ignorant of what art really means.

THE meeting in the Chapter-house at Lincoln last Saturday, to which we referred last week, appears to have resolved on the demolition of Wren's Library without a dissentient voice. The scornful remark of one speaker that "in one case they had a specimen of the most beautiful period of Gothic architecture, and in the other they had a Palladian structure," is like going back to the days of the *Ecclesiologist*. Cathedral cities are usually about fifty years behind the rest of the world in their ideas, and Lincoln seems to be no exception to the rule.

THE great "stoppage" experiment in the coal trade is now being tried, and a great amount of unanimity prevails among the many thousand miners of this country on the subject. A very small proportion remain at work this week, and great pressure has been brought to bear upon the few who have not come out. Several collieries in North Wales at which the men had not given in their notices were visited by Federation agents last Saturday with the view of persuading the men to cease work. The attempt was only partially successful, and those who still persisted in remaining at work were threatened with expulsion from the Federation. Certainly many worse things might befall them, and perhaps some of the more far-seeing among their English brethren would be rather glad if they were likely to be punished in a similar manner. There is no disputing the fact, however, that the majority of the miners look upon the step they have taken as being a wise one; and consider that they will be able to resume work next week free from any apprehensions of a reduction in wages. They are exhibiting an utter disregard for anyone but themselves, and appear to think that they are now in a position to dictate what shall be done in regard to production, hours of labour, &c., independently of masters, or of any other interest whatever. The spasmodic inflation of prices, combined with the reduced output, will doubtless produce great temporary activity; but it cannot be long before things will find their own level again, and the loss sustained by the country in the meantime will intensify the demand for a reduction in the cost of fuel. The effects of the struggle will be keenly felt on the Tyneside, where much distress exists already in consequence of the protracted strike of engineers, which is still unsettled. There will doubtless be distress in many other districts, and certainly a great amount of inconvenience in all directions; but it is to be hoped that the fact that the greatest hardships are already falling upon the poorest classes, will have its due influence in bringing about a speedy termination of the dispute.

THE following are the members of the Royal Commission appointed to consider the question of metropolitan water supply: Lord Balfour of Burleigh (chairman), Sir George Barclay Bruce, C.E., Professor James Dewar, F.R.S., Sir Archibald Geikie, Mr. George Henry Hill, C.E., Mr. James Mansergh, C.E., and Dr. William Ogle, M.D., F.R.C.P. This is a very good and representative Commission, but the terms of the reference are not satisfactory. The Commission is only to consider—

"Whether, taking into consideration the growth of the population of the metropolis, and the districts within the limits of the metropolitan water companies, and also the needs of the localities not supplied by any metropolitan company, but within the watersheds of the Thames and the Lea, the present sources of supply of these companies are adequate in quantity and quality, and, if inadequate, whether such supply as may be required can be obtained within the watersheds referred to, having due regard to the claims of the districts outside the metropolis, but within those watersheds, or will have to be obtained outside the watersheds of the Thames and the Lea."

Thus apparently the most important question, viz. *where* London is to go for water if the supply has to be obtained outside the watersheds of the Thames and Lea, is outside the power of the Commission; so at least the wording of the reference would lead one to infer.

THOSE who are interested in the maintenance of open spaces and the prevention of the further overcrowding of buildings in London should turn their attention to the proceedings on the Bedford Estate, where there seems to be a fixed intention to turn every available corner of ground into money, at the expense of sanitary conditions. Lately some small houses facing Caroline and Charlotte streets, just south of Bedford-square, have been pulled down, and the longitudinal space between them, parallel with the south side of Bedford-square, is offered as a building lot, for the formation of a new street of houses between Caroline and Charlotte-streets. Not only will such a street crowd up the houses very much, and deprive the district of some much-required breathing space, but the operation must necessitate the cutting down of a good many trees now standing on the ground. To deprive the centre of London of any trees still remaining, unless under absolute necessity, is a piece of mischief which cannot be too strongly deprecated, and the policy of the Bedford Estate in these matters is both selfish and shortsighted, as it is not only spoiling the amenity and healthfulness of the neighbourhood, but reducing the value of the property in the effort to grasp every penny that can be made out of it. Surely some higher authority ought to have power to check this insanitary crowding up of London spaces by grasping ground landlords.

BY a clever *coup* the Prussian Government obtained from the Budget Committee of the Diet a resolution which recommends the House to vote ten million marks (some 500,000*l.*) towards the expense of erecting a cathedral at Berlin, and, as such recommendations are mostly followed, Professor Raschdorff now has some chance of seeing his design for the new "Dom" carried out. According to a report on the discussion that took place on the matter in the Budget Committee, the Emperor will erect the cathedral, and not the nation as such. The nation will only vote the money towards the erection; the Emperor's private Board of Works will manage all matters relating to the building, and will also bear all responsibilities. The Government stated that on no account would they at a future date ask the taxpayers for more money than the ten millions, and we must hence assume that the Emperor will raise such extra funds as may be necessary. For the German public the cathedral question no longer exists,—the matter has become distinctly distasteful to them. In art circles the feeling is not so much against the cathedral scheme, as such, as against the despotic selection of the architect (a Court favourite) and the adoption of a poor design on an unpopular site.

FROM Berlin we hear also that the distribution of the Schinkel Medal and Travelling Studentships which took place on Sunday last has, for once, after an interval of several years, been a most satisfactory affair, and this in spite of the small number of candidates. Architectural competitors were required to send in a design for a "people's theatre," and engineers were to send in designs for a bridge over the Rhine between Cologne and Deutz. In both cases only two sets of drawings were submitted, but in both cases each piece of work was considered to be so satisfactory that the assessors decided to give four medals of equal value. The names of the two architects are O. Spalding and H. Heutrich. The medals were, as usual, given at the special meeting which the Berlin Architekten-Verein regularly holds on Schinkel's birthday, and this time the Minister of Public Works presented them in person instead of sending a representative.

IT was recently announced that the "Jerusalem" Exchange would be removed on Tuesday last from Cowper's-court, Cornhill, to fresh quarters in Billiter-buildings. Thus is severed an old association, in respect of locality, with its quondam neighbours, "Robin's," "Jonathan's," and "Garraway's," in Change-alley, and the "Jamaica," in St. Michael's-alley. The last-named was rebuilt from the designs of Mr. Banister Fletcher, architect, in 1885.* The "Jerusalem," which is stated to have been established in 1625, became a well-known coffee-house some years later, when coffee had been first made and sold in St. Michael's-alley; Aubrey says by one Bowman, or, according to other accounts, by Pasqua Rosee, a Greek, "at the sign," *teste* his handbill, "of his own head." Unlike the others, it retains its pristine character, having for long formed a meeting-place for merchants and shipowners connected with our South African, East Indian, and Australasian commerce. The subscription-rooms, and Jerusalem-chambers, Cowper's-court, were built in 1879, after the late E. Bassett Keeling's designs. A fire which broke out in the powdering-closet of Eldridge, wig-maker, in Exchange-alley, on March 24, 1748, destroyed all the coffee-houses we mention: "Tom's," the "Rainbow," and the "Three Tuns," in Cornhill; with several others between Cornhill and Lombard-street, including the "George and Vulture," the "Pennsylvania," the "Marine," the "Fleece," the "Swan," as also the house in which Gray the poet was born, and the London Insurance Office—as appears from a plan made by Thomas Jeffery in that year.

* See our "Illustrations" of September 19, 1885.

AT the Mart, on May 30 next, will be offered for sale the Rothley Temple estate, lying on the high road between Loughborough and Leicester, by a branch of the Soar, and near Charnwood Forest. It consists of 900 acres, with a total rent-roll exceeding 2,000*l.*, that of the house included. In the house, which is built of stone, and was at that time the seat of his uncle, Thomas Babington, was born Lord Macaulay (of Rothley) on October 25, 1800. Adjoining it stands a small chapel, reputedly of the thirteenth century, a relic of the Templars' Commandery or Preceptory at Rothley. In 1086 the manor of Roele or Rodolie, was held by the King. In 1230 Henry III. granted the manor and church together with Croxton Abbey to the Knights Templars, who had another settlement at Swinford, in the same county. On their suppression these possessions passed, 17 Edward II., to the Knights Hospitaller of St. John. At the Dissolution the preceptory was valued at 87*l.* 13s. 4d. in the MS. *Valor*, but Dugdale's assessment of Rothwell, Heather, and Dalby-on-the-Wolds preceptories (Leicestershire) amounts to 231*l.* 7s. 10d. nett.* In 35 Henry VIII. Henry Cartwright had a grant of the manor and advowson: he sold the former to Humphrey Babington, who, in 1567, bought the latter of Sir Ambrose Cave. Some exceptional jurisdiction, in both civil and ecclesiastical affairs, prevails throughout the Soke, as derived under Henry III.'s grant to the Templars, and which passed with the conveyance to Babington. In 1722 a Roman pavement, and some foundations of a wall, were discovered at Rothley.

SOME extensive re-building is about to be carried out at and near the southern end of Tottenham-court-road. The Association for Promoting the General Welfare of the Blind, founded in 1856 by the late Miss Gilbert, have cleared a large space for their new premises and workshops by the north-western corner of Tavistock-street, the ground abutting on Morwell-street in the rear. The "Horse Shoe" tavern and dining-rooms are to be re-built after the designs of Mr. J. M. Knight, architect; the "Oxford" Music-hall,—one of the earliest of the kind in London, and standing on the site of the old "Boar and Castle" posting-house,—is to be re-constructed at a cost, we hear, of 27,500*l.*; and the "Flying Horse," together with some adjoining premises in Bozier's-court, is to be demolished (Messrs. Saville & Martin, architects). Our readers will perhaps remember that the last-named quarter was marked for demolition under the first London County Council's scheme for widening this end of Tottenham-court-road, at a cost of 42,900*l.* A committee recommended that the owners of houses on the western side of Bozier's-court, which would then acquire frontages to the road, should contribute one-half of the increased annual rental value for a limited period, but their recommendation was rejected—see the *Builder* of October 10 last. The beneficial leasehold interest in the "Oxford," together with the "Boar and Castle," and Nos. 18 and 20, Oxford-street, was sold at auction in October, 1890, for 57,100*l.*, the lease having then twenty years to run, and the ground rents amounting to 925*l.* per annum.

A GENEROUS offer, made by Sir John Lennard, Bart., lord of the manor, to sell his interest in West Wickham Common for 2,000*l.*, considerably lightens the labours of the Bromley and District Commons and Footpaths Preservation Society. That Society, we gather, proposed to contest a threatened enclosure of the land. The area consists of 25 acres, whose value is tentatively computed as between 700*l.* and 800*l.* per acre, lying between Hayes Common and Coney Hall Farm, and not far distant from Croydon, Bromley, and Beckenham. It includes some finely-wooded hilly ground, together with some ancient earth-works. In response to an application for a scheme to secure the land for public enjoyment, the Board of Agriculture undertook to hold a preliminary inquiry to decide whether it falls within purview of the Metropolitan Commons Acts. The Board have now postponed such inquiry *sine die*, and it is to be hoped that the efforts promoted by Miss Octavia Hill, Mr. S. B. Bevington, Mr. Shaw-Lefevre, M.P., Mr. Israel Davies, and others to raise the necessary purchase-moneys will prove successful.

* See vol. vi., part 2, of the 1830 fol. edition. In W. Burton's "Leicestershire," 1777, will be found full details of the three rentals, as scheduled 46 Edward III.

WE may call attention to the useful work unobtrusively carried out by the "Society for Preserving Memorials of the Dead," one of whose recent meetings is briefly noticed in another column. The Society takes on itself the task of promoting the repair and preservation of memorials which seem in danger of being forgotten, neglected, or injured, and in so doing is carrying out (in accordance with its motto, "Patribus et Posteris") a work of reverence towards past generations and of usefulness, in a historical sense, for future generations.*

* The Secretary is Mr. William Vincent, to whom communications can be addressed at the rooms of the Royal Archæological Institute, 17 Oxford-mansion, Oxford-street.

A CORRESPONDENT sends us the following extract from the *Kentish Gazette* of July 4, 1787, which, in connexion with the subject of strikes and combinations of working men, is worth reprinting as a curious illustration of the way in which these things were regarded a century ago, and of the progress of Liberal ideas since then:—

"TO JOURNEYMEN CARPENTERS.

NOTICE.

The Commissioners of the Canterbury Pavement, having taken into consideration the late combination among the journeymen carpenters for advance of wages, by which the public improvements intended to be made in this city, are very much impeded, do hereby give notice, that they are determined, at the next General Sessions of the Peace to be holden for this city, on Monday next, the 9th inst., to indict such of the said journeymen carpenters as do not in the meantime return to their work, all such combinations being contrary to law, and every person having entered therein by subscription or otherwise, is liable to be punished by fine or imprisonment, or both, at the discretion of the Court.

By order of the Commissioners,
JOHN HODGES, Clerk.

Guildhall, Canterbury,
July 4, 1787."

THE rage for architectural competitions seems in Australia to be passing all bounds of reasonableness. A Sydney building journal mentions the case of a man who has been advertising for competition plans and designs for "a mountain residence," not even offering a premium or binding himself to accept any design or employ any one of the competing architects. We have not quite got to that in England yet, though we seem on the high road to it.

THE exhibition of the Institute of Water-colours cannot be said to rank very high this season. There is the usual amount of commonplace and less than the usual amount of noteworthy work to redeem it. We may remark however in the first place that there is rather a large proportion of drawings in which architecture takes a principal part. Mr. Yeend King's small works, "Salisbury Spire" and "On the Bath Road" (20, 22) are very clear little pictures full of light; Mr. Alfred East in "Wet Weather" (30) gives the prominent place to a curious little roadside church; Mr. S. Graham Petrie has painted "Clivus Capitolinus, Rome" (57); Mr. Jules Lessore sends a large view of the "St. Mark's, Venice" (120) and the Piazza, broadly treated but dull in colour; Miss Louise Rayner sends what we call a topographical drawing of "High-street, Oxford" (130), correct but ineffective: Miss Walker's "Tomb of Richard II., Westminster Abbey" (131") has the same kind of merit; Mr. Walter Tyndale gives a pleasant study of a quiet old building, "The Beguinage at Bruges" (133); Mr. C. E. Herne makes a fine study, on a large scale, but again somewhat prosaic, of the west towers of Westminster Abbey (168); Mr. Macquoid paints effectively "An Old Cloister, S. Pablo, Barcelona" (248); Mr. Yeend King again greets us with a brightly-treated little view of "Norwich" (388); Mr. Graham Petrie contributes a fine study of part of the Roman forum remains, one of the best things of the kind in the exhibition; Miss E. Rynd gives a carefully-worked but rather loaded view of the "Courtyard of the Palazzo Vecchio, Florence" (443); Mr. H. Pilleau the entrance to the Ducal Palace (447), a pretty but hard drawing; Mr. H. G. Hine a clever and real effect of "Ludgate Hill in Fog" (472); Mr. Lessore has a study of houses bordering "Tutton Pool, Plymouth" (504), and Mr. Macquoid a view of "Stokesay Castle' (709). Among works of special interest in a larger field may be mentioned Sir James Linton's one contribution, "Ah me, when shall I marry me" (407), a figure of a country girl, with more of character and less of decorative effect than is usual with this artist; "Harvest Time" by Mr. Leopold Rivers (121); "Arab Trophies" (255), a good bit of still-life, by Mr. S. B. G. Watkin; "Ammonites" (283), a study of the same class by Miss Kate Whitley; "His ain fireside" (284), a capital little painting of an interior with a Renaissance mantelpiece, by Mr. Fulleylove; "Carting sand, Hambledon Common" (19) by Mr. Jas. Orrock, a large landscape in a fine pure water-colour style, a little dead in colour; "On the Downs" (416) by Mr. E. M. Wimperis; "Pilgrims to Holy Island" (459), a characteristic scene by Mr. F. G. Cotman; "Evening Glow" (487) by Mr. J. M. Bromley, a large powerfully-treated landscape rather startling at first in its strong colour, but which is really a very truthful representation of a landscape under a rather unusual effect of evening light; and "On the River Arun, Sussex" (596), a fine landscape by Mr. C. E. Johnson.

THE views of "The Tidal Seine" by Mr. W. H. Bartlett, now at the gallery of the Society of Fine Arts, form an interesting collection of views of the lower Seine, executed in a slight but broad and thoroughly artistic style. Some of the best are not on the Seine (visibly) but in field-nooks on its banks. The artist has in two of the drawings endeavoured to give a realisation of the remarkable feature of the river, the formidable "bore" that rushes up it at spring tides, a phenomenon so striking and unusual that any picture of it must be interesting, though we cannot feel that the effect is very powerfully given here. The quieter scenes are more successful; "Among the Willows, Vieuxport," which has a beautiful effect of sunlight; "A Lavoir on the Gertrude," with the village on the opposite bank framed in the opening of the washing hut; "On the Villequier Road;" "The Quarries, Yainville;" "A Silver Summer Morning," &c. The collection is well worth a visit both for its artistic and topographical interest.

AN interesting and clever Friday evening discourse was given at the Royal Institution last week, by Mr. F. T. Piggott, whose articles on Japanese decorative art in our columns a little while since, under the signature "F. T. P.," will be remembered by our readers. Mr. Piggott took for the title of his lecture "Japanesque," the word expressing the character of some of the English work done when Japanese art first began to attract attention here, and when it was thought that any kind of irregular throwing of sprigs on a plate or other object gave it Japanese character; an idea which perhaps is not quite

extinct now in some quarters. Some of the illustrations of "Japanesque" of this kind were very amusing, and fully justified Mr. Piggott's criticisms. His claim for true Japanese art is that it shows a clear regard for proportion and contrast in the placing of decorative design, and a perception of the value of untouched spaces; that Japanese sprigs are not tossed anyhow on a surface, but exhibit a definite system of growth and design, which is of course perfectly true, and was illustrated in the examples shown. Some other conclusions of the lecturer we cannot so readily accept. He denies that the Japanese misuse landscape as decoration, maintaining that they only paint a landscape upon a plate instead of on a piece of canvas, and that it is "landscape" and not "decoration." The result to the eye, however, is the same, and we are still of opinion that landscape-painting is out of place on plates and trays. Mr. Piggott also pointed out that in decorating door-panels the Japanese do *not*, like their English quasi-imitators, begin a branch of tree on one panel and continue it on the next as if it had passed under the stile; they paint a picture the size of the two panels, and cut it in two, placing half in each panel, and the line of a tree or a hill commences on the second panel where it left off on the first, and is not continued by an imaginary line under the stile. This was illustrated by a picture of the eternal Fusiyama, treated in this way. The method is constructively logical, no doubt, but that does not prevent it from being pictorially clumsy. Some of the illustrations of Japanese design shown on the screen, however, were charming, and the library was filled with interesting pieces of Japanese work which formed a centre of attraction after the lecture. The subject of Japanese figure-drawing was wisely avoided, and the lecture was a complete success in the way of interesting an audience and giving them something to think of; but we fear it did not convert us to a belief that all the mystery of decorative art resides in Japan, and there only.

ARCHAIC COMPARED WITH ARCHAISTIC SCULPTURE:

ROYAL ACADEMY LECTURES.

DR. A. S. MURRAY, F.S.A., Keeper of the Greek and Roman Antiquities in the British Museum, delivered the first of a series of three lectures on sculpture to the students of the Royal Academy on the 13th ult. He commenced by observing that the archaic age of Greek sculpture lasted, roughly speaking, from 600 B.C. to 500 B.C. There was no doubt much sculpture before 600 B.C., but it inclined rather to the primitive order. After the year 500 B.C. there was a period of perhaps fifty years in which many traces of archaism lingered on, but, broadly, it was between 600 and 500 B.C. that Greek sculpture passed through the stages commonly called archaic. Considering the archaic sculptors, with their love of minute observation in every kind of detail, and the graciousness with which their laborious accuracy was generally set forth, one was struck by the amazing contrast which they presented to the great age which immediately followed,—which, in fact, followed so quickly that the men who were greatest in the great age had been as youths trained in the archaic school. It was matter of conjecture whether the great age of Greek sculpture would ever have been but for the long period of elaborate painstaking which had gone before. But we failed to trace the transition, so suddenly did the new age burst forth in all the glory of Pheidias. The archaic sculptors were as men leading the way to a Promised Land which they must not enter. One or other of them might have had a precognition of what was to come, but as a rule the scope of all their thought and labour was the attainment of perfection within the particular manner and method in which they had been trained. When that perfection of manner and method was achieved, it was for a fresh generation to break new ground, and so it happened that in archaic sculpture we had a clear and distinct set of phenomena which might be studied apart, without reference to the subsequent age. They had to make a comparison between archaic sculpture on the one hand, and between a series of sculptures which at first sight seemed not to be different. The latter were called "archaistic," and perhaps the very slight difference in the form of the two words "archaic" and "archaistic" was not a bad indication of what they had to expect. Yet there was in the meaning of the two words a strong contrast. The Greek in which the New Testament was written was called "Hellenistic" because the writers were not Hellenes; but, not to cite further instances, the distinction was that "archaic" meant truly "old" while "archaistic" meant an "affectation of being old," the termination "istic" always implying imitation or affectation. They might demand to have some proof that there was such a thing as archaistic sculpture, however ready they might be to accept a stage of sculpture of that kind as a perfectly natural result of civilisation of Greece in later times. The lecturer pointed to a cast of a marble relief found in Athens, and representing the side view of a temple, in front of which, separated by a wall, were two figures, recognisable as Leto with her sceptre and Artemis with her torch. On the extreme left, behind Leto, is a pillar surmounted by a tripod; and when they compared that fragmentary relief with other reliefs of the same subject (there were several in existence) they found that the missing portion on the right had contained a group of Apollo Citharoedos receiving a libation from Victory: just such a group, in fact, as they saw in another marble relief in the British Museum, where Apollo Citharoedos was receiving a libation from Victory beside a temple. From the presence of a tripod on the fragmentary relief it was supposed that all these reliefs had been sculptured at the instance of men who had gained prizes in musical contests and who wished to commemorate their own success under the guise of a victory of Apollo. That would be consistent with the reverential feelings of the Greeks. But a special point in these reliefs was that the capitals of the temples were always Corinthian. It was plainly impossible that the sculpture could be archaic, since the Corinthian capital was not known until long after the archaic age. One of the earliest examples of the Corinthian order was the monument of Lysicrates at Athens,—the "Lantern of Demosthenes," as it used to be called,—and it was erected to commemorate a musical victory in the year 335-4 B.C. Between then and Roman times was the flourishing period of that order, and somewhere in that period the two reliefs mentioned would fall. If for no other reason than the architecture they could not be archaic, but they affected to be archaic, and, therefore, they must be called "archaistic." Incidentally, the lecturer pointed to the curious device of the sculptor in placing a high wall between the figures and the temple; what he wanted was, of course, a background for the figures, and nothing could be better than a wall. Most temples were enclosed by walls, and figures outside the walls would revive a familiar association of ideas. In a similar manner the sculptor of a well-known relief in the Museum, called the "Apotheosis of Homer," had chosen to hang a curtain in front of the columns of his temple. So, also, in another very interesting relief in the Museum, representing the visit of Dionysos to Icarios in Attica, there was a curtain stretched to form a background to the figures, and so far concealing the architecture behind. What the sculptor required in all these instances was a background. What the facts of the case required was a view of the interior of a temple or a house within which the scene was believed to be taking place. If we took the sculptor literally, the scene was quite outside the temple,—even outside the enclosing-wall. But he meant the temple to be taken as a sign or symbol of a locality where there was a temple within which such scenes were conceived to be enacted. In the case of these musical reliefs the Temple of Delphi seemed to be indicated by the presence of an omphalos and of a great plane tree in another of these reliefs. The lecturer next directed attention to a cast from a relief in granite which represented Hermes holding his caduceus and a lyre,—not that he was a musical god like Apollo, but he was inventive, and it was he who invented the lyre. He had thus a right to carry the instrument as a symbol. The relief in question was found at Canopus in Egypt, on the site of a temple erected there by King Ptolemy Energetes I. It could not therefore be older than the date of that king,—the second century B.C., and might be considerably later. Yet at first sight it seemed a piece of archaic sculpture. The lowness of the relief, the way in which the mantle was folded and pressed flat, the attitude of the figure, the shape of the head, the manner of rendering the hair, these were all points suggestive of archaic art. But that was only at first sight. Looking closer, we saw that the long piece of drapery was absurd, and that the whole figure was decidedly imitative. These instances, selected from many, would be sufficient to show that there did exist in the later age of Greece an actual school of archaistic sculpture. But how did that curious taste arise? We had to remember that in that later age Greek art was in the condition of having exhausted its creative faculties. It had expended them in the grandest fashion: still, it had exhausted them. Its technical skill was unabated. Demands for new sculptures came thick and fast from the Roman conquerors, and perhaps those Romans might have spared some of the older sculptures of Greece if the contemporary Greek artists could have supplied them with works equally suitable to their taste. No one could justly say that the Greeks after the Roman conquest never made an effort to do something great,—to lash their jaded imagination, and to create a new school. The sculptures of Pergamon would be a contradiction. But the general fact remained, that after the Roman conquest the imaginative power of the Greeks was gone, while their technical skill and training were great. Artists in that condition would naturally have a keen sympathy for archaic sculpture. Its mannerism and methods were all within narrow limits. They could easily be appreciated. The trick could be acquired of imitating them with the same facility as contemporary poets showed in imitating Homer, and what added to the success of the new movement was that the Roman conquerors and patrons had a particular passion for archaic Greek sculpture. But it was only fair to the Greeks to bear in mind also that though the spirit which had pervaded archaic art was swept out of existence in the early part of the fifth century B.C. by the great wave of freedom which produced works like the sculptures of the Parthenon, yet a very considerable portion of those archaic sculptures remained in Greece to be seen of all men even down to the time of Pausanias. Under these circumstances the appreciation of works of archaic sculpture would never wholly die out. Mr. Murray concluded his first lecture by appealing at some length and in great minuteness to the evidence afforded on the subject by painted vases and coins.

Mr. Murray delivered his second lecture on the 18th ult. He said it would not take long to run over the various points which, according to his light, distinguished the archaic from the archaistic among the sculptures of which he exhibited casts or drawings. Among the casts were two figures from the outside of a marble cylinder which appeared to have been used as a well-head or puteal, forming a sort of barrier round the mouth of the well. For its purpose there was an obvious convenience in the low, flat relief. If the work were archaic, the lowness of the relief would be a simple matter of necessity, for nothing else was then known. But let them see whether the work was not archaistic. The marble puteal in question was found at Corinth and brought to this country by Lord Guilford in the early part of the present century. It was placed in his house in St. James's-square, and was there seen frequently by persons interested in ancient art. A cast was made and presented to the then Lord Aberdeen,—"The travell'd Thane, Athenian Aberdeen." From him the cast came to the British Museum. But meanwhile the original marble had disappeared. What had come of it no one knew. The time came when Lord Guilford's house was sold. The new owner set to work to alter it greatly, but it did not appear to be quite certain whether he had acquired a right to the sculptures in the house as well as the house itself. There were other sculptures besides the puteal. At all events the house seemed to have been pulled to pieces a good deal, and the sculptures were no more heard of, with one exception. A few years ago the lecturer was asked to look at an interesting Greek bas-relief in a house in Connaught-square. It turned out to be one of Lord Guilford's marbles, and was at once presented to the Museum. But the puteal was still missing, notwithstanding a

creditable attempt which was made by the Hellenic Society some years ago to hear of it by circulating engravings which they had made from the casts. For the immediate purpose of the lectures this Corinthian puteal was a sort of test. The Hellenic Society, in publishing the engravings referred to, printed at the same time an article by Prof. Michaelis, of Strassburg, to whom they had sent photographs. Speaking of one of the figures known as Alcmena, he said (*Hellenic Journal*, vi., p. 48):—"The character of real archaism is still more apparent in the figure of Alkmena, the hard archaic treatment of whose drapery is scarcely to be recognised in the engravings. It strongly recalls some figures in the Thasos relief in the Louvre. On the whole, the photographs strongly corroborate the view of those scholars who would like to ascribe the marble, not to some late period of imitated archaism, but to an earlier epoch in which true archaic feeling began to be blended partly with a certain dawn of freedom, partly with a slight exaggeration of traditional habits." It would thus be gathered that there had already been a good deal of dispute about this Corinthian puteal. The subject, which extended around the whole surface, represented the gods going to the marriage of Heracles, the principal feature being a line of deities following one after the other, each carefully marked out by some special attribute, and each at a fair distance from the other, as would be seen in the casts exhibited. There was a suggestion of fear lest the deities might not be all recognisable unless their familiar attributes were clearly put forward: that did not look archaic by any means. Then we were struck by the amount of vacant space between and around the individual deities, which gave the design an air of parade—not to mention that it saved the sculptor from difficulties of composition, which a closer grouping of his figures would have caused. Further, there existed a number of reliefs on marble, which represented very similar subjects, and in a strikingly similar manner. These reliefs had been found in Rome; they occurred on bases or altars which from their shape belonged as clearly to the Roman age as anything that could be conceived; there never had been the least question about it. On these also the figures were wide-spread, reminding us of a line of columns; the relief was low and flat; there was hardly such a thing as artistic composition in them; whatever composition there was was more of an architectural kind. There was a manifest intention to imitate archaic sculpture in details, but an equally evident regardlessness of its spirit of design. What was true of these Roman altars and bases seemed to be true also of the Corinthian puteal, and the lecturer therefore considered it quite natural that many archæologists had considered the sculpture to be an archaistic work of Roman times. If others, like Professor Michaelis, had thought otherwise, it was because they assumed that the true archaic age had in its last days exhibited an "exaggeration of traditional habits," and because they left too wide a margin for these exaggerations. Prof. Michaelis had compared these casts with the archaic reliefs from Thasos, in the Louvre. But on examination the widest differences would be found. For example, to take the figure of Hermes, with wings on his heels. Archaic sculptors knew that these wings were attached to sandals, and did not grow out from the heels of Hermes; they would never have allowed themselves to represent those wings in such a manner. The sculptor of the figure must also have known that the wings ought to be attached to sandals; but he was probably afraid to put sandals on the feet, lest by so doing he might take away from what some would call the purism of his figure, but which we should call the affectation. Besides, the archaic curl of the wings told more instantaneously when not attached to sandals, and the desire of the sculptor was to get an instantaneous effect of archaicness. So, also, the drapery which fell over the arms of Hermes had been planned and sketched simply and solely for a pretty effect. The female figure, taken by itself, and not, as it stood on the marble, in the middle of a line of ten figures, had not much that was easily detected as archaistic. It was a much simpler matter to catch the archaic manner in a draped female figure like that. But even then, how different was the beautiful freshness and significance of every part of the Thasos reliefs. One could never see the originals in Paris without the deepest admiration, so sweet was the conception of each individual figure, and so true to that conception was the careful, assiduous, affectionate working-out of the details of drapery and form. Of the ten figures in the Corinthian puteal, three were male, the Hermes already referred to, then Apollo and Heracles. The lyre of Apollo was very conspicuous, as was to be expected; but when we came to Heracles, the sculptor had made quite sure of the recognition of the figure. A club or lion's skin would have been enough: he had given us club, lion's skin, bow, and quiver. The lecturer next proceeded to speak of another and unquestioned archaistic example,—a marble relief in the British Museum representing a female figure offering an oblation or sacrifice before a warrior, behind whom was his horse and attendant. On the top of the slab was a late Greek inscription commemorating certain men who had fallen in some battle. The battle was not specified, nor was the name of any particular man mentioned in the inscription. The writing was clearly very late, and it was equally clear that the monument was not the monument of one man, but a memorial tablet for a certain group of men who had fallen. The warrior with his horse and attendant was a type of those who had fought and perished. The slab being undoubtedly of a late date, it followed that the sculpture, so far as it professed to be archaic, must really be archaistic. It professed very much to be archaic. To consider the figure of the warrior, and to take just one point,—the way in which the lower part of his cuirass was rendered. Compared with fact or with true archaic art, it was an absurdity, a gross exaggeration; and yet, with its preciseness, and its truthfulness to the actual shape of a cuirass apart from its adaptability to the man who wore it, the cuirass might be archaic. The aim of the sculptor was first to get his cuirass exact, whatever happened to the man; and, secondly, by that and similar means to imitate archaic art, which he knew was always faithful in details. The horse was a great difficulty, and the sculptor was, perhaps, wise in his generation to show us only a part of the animal. Anything more wooden it was impossible to conceive. Horses and animals generally did not suit the archaistic sculptor, for they were the same, or nearly so, in all ages. They had no pronounced habits or peculiarities which could be caught up and made conspicuous, like the armour of men or the costume of women. In the costume of men and women in the archaic age there were certain points which were easily recognised. For instance, there was a love of long ends of drapery falling in characteristic folds of a zig-zag outline. Having dwelt upon the treatment of drapery in archaic sculpture, Dr. Murray concluded his second lecture by referring to the influence of the conquering Romans in promoting the production of archaistic Greek sculpture. We could not but feel, he said, that the imitation of archaic work must always have appeared more or less insincere to the Greek artists, however little able they might have been to produce anything original. The Romans had no such ideas. They had known archaic Greek work in its own day, and their hereditary love for it caused them to seek imitations of it. When the great ages of Pheidias, Praxiteles, and Lysippos were passing in Greece, the Romans were busy with their own affairs. When the archaistic revival occurred in Greece, it must have appealed strongly to the Romans, who, as fate would have it, just then acquired dominion over Greece.

Dr. Murray delivered the third and concluding lecture of this series on the 22nd ult. In the latter portion of it he returned to the archaistic manner of representing animals. In one relief they had already seen the fore-hand of a very feeble horse. But there was in the British Museum another sculpture which represented, in very low, flat relief, and with an obvious pretence of being archaic, a group of Castor holding back his horse; behind him was a dog. He might say "Beware of the dog!" but, bad as it was, it was not much worse than most of the dogs of true archaic art, and therefore its badness could not be cited alone as a proof that the work was archaistic, but only as being perfectly consistent with that being the case. Even in so fine an archaic work as the Harpy Tomb, there was a dog which, so far as he was visible at all, was little better than the one on the Castor relief. But it was the painted vases which furnished the best examples of the feebleness of the archaic Greeks in the representation of dogs. Indeed, the Greeks never appear to have succeeded perfectly in their dogs,—a strange thing, considering how unsurpassed they were in most other animals. The dogs of modern Greece were very ferocious and unfriendly; they might have been so in antiquity also, and that might have led to negligence in the study of them. But even pet dogs, like that of the poet Anacreon, as we saw it on several of our painted vases, were rendered with an amount of feebleness which was unintelligible, side by side with the strong, confident drawing of the figure of Anacreon. Returning to the relief, it would be a fair inference to say that the sculptor could have made a much better dog if he had not been following a poor archaic model, making bad worse. The tail of the horse was a failure as a reproduction of the archaic manner. His mane was more like a frill than a true hogged mane, such as was seen in the Parthenon frieze. But here there was some excuse, because the hogged mane was rare in archaic work; a long, flowing mane was what was liked, as we saw in abundance on the painted vases. What struck one as curious in this relief was that a sculptor who was obviously desiring to produce an archaic effect should have taken the conception of his group from the Parthenon frieze, which had nothing to do with the archaic spirit. The figure holding back a horse was a conception which was first immortalised in the Parthenon frieze. But while retaining the Parthenonic element in the horse, the sculptor had added an archaic element in the figure of Castor. The design as a whole suggested a comparison with a slab of the west frieze of the Parthenon, where we saw a horseman on foot holding back a horse which reared with impatience to join the cavalcade in front. In that slab the horseman was standing at the off-side of the horse, and was thus partly concealed from view; but we could compare the manner in which the drapery flowed across his left shoulder with what was seen in the Castor relief. It would be observed that the mantle of Castor was represented in very low artificial folds, intended to look archaic, and that at the point where they had to cross from the shoulder to the background the sculptor had made them sink down immediately to the background, as if he had been afraid lest an appearance of thickness in the drapery just there would have been injurious to the effect of very low flat-relief which he desired to produce. It was a complete disregard of the true and natural movement of drapery in such an attitude. How different it was on the slab of the Parthenon. There, the left arm was extended in the same way; and the mantle, in a perfectly natural manner, was thrown backwards by the movement, and then rushed out into one of the most magnificent realisations that could be imagined of the thick folds of a mantle as affected by rapid movement. It was true enough that the Greeks, even in the good times, did not always pay due regard to the obvious effects of movement in such matters. In the Phigaleian frieze, for instance, there were many examples of drapery which, instead of following the movement of the figure, was made openly to adapt itself to a certain space which had to be occupied, even in defiance of the action of the figure. The lecturer next called attention to another cast from a marble relief in the British Museum, representing Heracles overpowering the Keryneian stag. The subject was common in antiquity, and as to this particular version of it, it had been disputed whether it was truly archaic, or only archaistic. Suspicions were aroused at first by the fact of its being placed within a frame obviously designed for some casual decorative purpose, and from its being altogether wanting in those true architectural mouldings which we should expect in earlier work. Some parts of the relief were modern restorations. But among other parts the neck and shoulders of the deer were ancient; and yet, could anything be more absurd than the rendering of them? It was the merest feebleness and imbecility. The body and head of Heracles were more carefully studied from earlier models; but if they were examined in detail it would be seen that they also were little better than a parody of true archaic art. Yet the whole composition and execution had passed for a time, among otherwise good judges, as "probably archaic," with just a slight reservation of doubt. In

conclusion, Dr. Murray said that in these lectures he had tried to point out the differences that existed between archaic and archaistic sculpture. In most cases those differences were obvious enough. In regard to others, a certain amount of controversy still existed. He had thought it would be interesting if we could in some measure trace the origin of the archaistic movement in Greece in the third and second centuries B.C., and the reasons why the Romans, when they became masters of Greece, gave so liberal an encouragement to that movement. These inquiries had often led them away from the actual works of sculpture to the consideration of such matters as the conditions of national life, or the characteristics of national literature in the two periods in question, in the hope of deriving some light from those quarters. He could only hope that those inquiries might not have been altogether unprofitable.

EGYPT EXPLORATION FUND.

THE fifth ordinary general meeting of the members of this Fund was held on the 11th inst. in the hall of the Zoological Society, Hanover-square. Sir John Fowler, the President, occupied the chair.

Mr. H. Grueber, the hon. treasurer, read his report, which stated that the balance-sheet would be found to compare very favourably with its predecessors, and even with that of last year. The favourable state of affairs was again due to the indefatigable labours and splendid organisation of the hon. secretary and vice-president, Miss Amelia B. Edwards; to the continued valuable and unremitting labours of the hon. treasurer for America, the Rev. W. C. Winslow; and to many individual members of the Fund. The total expenditure for 1890-91 was 2,547*l.* 15s. 4d. The total receipts for the same period were 3,092*l.* 18s. 8d., including subscriptions and donations amounting to 2,694*l.*, 1,050*l.* being sent through the Rev. W. C. Winslow; and 100*l.* from the University of Philadelphia. He wished to draw attention to the fact that the Fund was now freely launched into a double undertaking,—viz., into that of survey as well as excavation. How successful the latter had been it was unnecessary for him to say, but he might add that the survey promised well to follow in its footsteps.

Mr. Mackrell, in moving the adoption of the report, said that it was not creditable that England should be almost outdone in its support of the work by America.

Mr. A. J. Woodhouse seconded the motion, which was adopted.

The President said that the first word he had to address to them was to express his and their deep sorrow and regret at the absence of Miss Edwards, and especially at the cause of her absence. Miss Edwards had been for many weeks dangerously ill, and he was sure they all hoped that she might be soon restored to health and strength. They had suffered great losses in the deaths of Sir William Gregory and the Hon. Russell Lowell. Proceeding to mention some of the work which their explorers had done in Egypt last season, he said that M. Naville had excavated the Temple of the Egyptian Hercules at Ahnas, which he surveyed the previous year. He had found six granite columns, about 17 ft. in length, with palm-tree capitals. One of these, quite perfect, was now in the British Museum, and having personally seen and admired it, he (the President) could strongly recommend them all to pay it a visit, for it appeared to him to be one of the most perfect and remarkable Egyptian works he had ever seen. This column bears the names of Ramesis II. and his son Menaphtheh, the Pharaoh of the Exodus. The other five columns had been distributed amongst various museums. M. Naville had also found a granite colossal statue of Ramesis II., sent to the United States, also a large lion couchant, which had been sent to the Watt Institution, Greenock, and a red granite bust of Ramesis, sent to the Charterhouse, besides many valuable small objects which had been distributed. The Rock Temples of Beni Hassan and Elbesteh had been surveyed, the inscriptions copied, and the best of the wall-paintings reproduced. This important work had been performed by Mr. Newberry, Mr. Fraser, and Mr. Blackden. The whole of their united work would be brought out in two parts during the present year, and would undoubtedly be one of the most interesting and valuable publications of the Fund. In conclusion, the Chairman mentioned that Mr. Blackden, the artist (an Academy Student), had given his services gratuitously to the Fund.

A report by Miss Paterson, on behalf of Miss Edwards, having been read, a resolution was passed recognising the valuable services of Miss Edwards and Miss Paterson.

Mr. Percy E. Newberry then read a paper on the work of himself and his colleagues at Beni Hasan and El Bersheh, in the course of which he said:—I have been asked by the Committee to lay before you the report of the work done by the officers of the Archæological Survey of Egypt since it was started eighteen months ago, and to report to you that the great work which you have undertaken now rests on a solid basis. The general object of the survey was explained to you at the last general meeting in a paper by Mr. Griffith, the originator of the idea and the honorary superintendent of the work. The object was briefly this,—to catalogue, measure, and copy all the monuments which exist above ground in Egypt. The scheme was suggested by Mr. Griffith in 1889, approved of and referred to the Committee at the general meeting in 1890. The Committee considered the matter, and, in August, 1890, a sum of money was voted in order to enable me to study under Mr. Griffith and work out with him the details of the scheme. The details having been duly prepared, I started for Egypt early in November, 1890, and, on my arrival in Cairo, I was joined by Mr. Fraser, who had meanwhile been appointed engineer to the survey. On the 25th of the same month we left Minieh, and arrived the following day at Beni Hasan, the site agreed upon for our first season's work. The report of that work has already been published by me. . . . Mr. Fraser, Mr. Blackden (the artist who joined the expedition in February, 1891), and I remained at work in the tombs of Beni Hasan until the early summer, when we returned to England. During the summer Mr. Fraser was engaged in drawing in ink the plans of the tombs at Beni Hasan; I meanwhile preparing for the photographer some 10,000 square feet of tracings which I had outlined in pencil at Beni Hasan. At the same time I also worked through the MSS. of Burton, Hay, and Wilkinson, preserved in the British Museum. Early in October Mr. Fraser left England for Beni Hasan, where he arrived on October 30, to complete his sketch survey of the tombs there, and on the 15th of the same month I followed, taking Paris on my way, to examine the MSS. of Champollion and Nestor de l'Hote. After making copious excerpts from these, I immediately proceeded to Egypt, and was joined at Alexandria by Mr. Howard Carter, a young artist whom the Society had engaged to assist me in tracing. We then proceeded together to Beni Hasan, and within three weeks Mr. Carter and I finished our work there, having traced some 2,000 square feet of painting. We then moved on to El Bersheh, and encamped in the ravine behind the Coptic village of Dêr en Nakhleh. At El Bersheh, curiously enough, only two inscribed tombs were previously known to Egyptologists. These were: the well-known tomb of Tahutihotep, containing the paintings of a colossal statue on a sledge being drawn by 172 men; and the tomb of Ahanekht, inscriptions from which had been published by Professor Sayce in the *Recueil* about two years ago. Within a quarter of an hour of my arrival at El Bersheh, however, I had the good luck to discover ten more inscribed tombs, all of about the twelfth dynasty, and containing many lines of inscriptions. It is simply extraordinary that these should never have been noted before, as they all lay within 100 yards of the tomb of Tahutihotep, and six of them were actually on the same level. They had most of them suffered from the effects of an earthquake, which must have taken place before Coptic times, as on many of the fractures of the stones are painted Coptic crosses and inscriptions, which date from an early period. Several of the walls of the tombs here have fallen in, and been fractured into hundreds of pieces,—some weighing about a ton, others no bigger than a walnut-shell. The bigger blocks had to be carefully moved, and then I had, with Mr. Carter's assistance, to fit the smaller pieces on to the bigger blocks and then trace them. By this means I was enabled to restore many a picture and several important things. In one case I fitted together about thirty fragments, and restored a block about 1 ft. square, taking nearly half a day to do it. But I was well repaid for my trouble, as I found that the name of one of Tahutihotep's daughters was inscribed upon it, and, moreover, the name of one of the daughters we did not know of previously. By fitting up an innumerable quantity of fragments, and by the help of the inscriptions and paintings still intact upon the walls, we have been able to glean a goodly harvest from the El Bershed tombs, and withal a harvest which shows the importance of the scheme which the Society has undertaken. It is only by the most patient examination and study of the inscriptions and paintings that one can attain any really satisfactory result. . . . . The chief result of the past two seasons' work is, of course, that we have now not only plans of the tombs, and water-colour *fac-similes* of many of the most interesting scenes, but copies of the inscriptions and outline tracings of all the wall-paintings in the tombs at Beni Hasan and El Bersheh. The entire work of the past two seasons up to three weeks ago (with the exception of four of Mr. Blackden's drawings) is now before you. There are, as you will see, water-colour drawings by Mr. Blackden, plans by Mr. Fraser, photographs by Mr. Fraser and myself, as well as these rolls of tracings. The majority of these I pencilled in on the walls during my first season's work; and I reckon that there are here upwards of 14,000 square feet of tracing-paper covered with pencil outlines, 12,000 ft. of which at least I have done with my own hand. . . . Before concluding this part of my report, I ought to add that the sketch survey of the tombs and hill at El Bersheh is now being done by Messrs. Blackden and Fraser, and that it is hoped that it will be completed before the hot weather sets in. It is much to be regretted that we have not more water-colour drawings this season (we have only about an eighth part of what were done last year), but this is owing to the fact that Mr. Blackden has had to superintend the work of excavating and the sketch survey of the tombs. . . . . Making copies of the paintings and inscriptions at Beni Hasan and El Bersheh is not, however, all that I have done for you this season in Egypt. I have also explored the Nile Valley from Minieh to Kusîyeh, on the left bank, and from Zawyet el Mayyitîn to Hawâta, on the right bank, and have noted all the mounds, place-names, and objects of archæological interest within that district,—a district about forty miles long. No records of exploration on the left bank have been made since the beginning of the century. Going down the Nile as far as Nezala Ganub, I struck to the west through the town of Kusîyeh to a Coptic village named Mêr. To the west of this village is the Bahr Yusef, then a stretch of cultivated land. To the west of this, again, is a wide expanse of sandy desert, traversing which one reaches the hills of the Libyan chain. Excavated in these hills due east of Mêr are tombs of the sixth, twelfth, and twenty-sixth dynasties. A few miles further to the north is the village of 'Awâga. To the west of this are tombs in the hills, and a very large cemetery at the edge of the desert,—a cemetery which extends northward nearly as far as Bawît. North-west of Bawît are two uninscribed limestone quarries. From Bawît to Minieh the hills are all sand-choked, with the exception of a few cliffs east of Derwa and Tuneh. At Gebel Tuneh is one of the boundary stelæ of Chuenaten, dated in the eighth year of that monarch's reign. Having explored the Libyan hills from Mêr to Minieh I then took a horse and explored the villages and mounds of the cultivated land. At Daschlût, Hour, Derut en Nakhleh, and a few other villages are small mounds. The village of Gilga is built on an enormous mound, one of the highest that I have seen in Egypt. The mounds at Eshmunên, which mark the site of the Greek Hermopolis, are being dug away for sebâkh, and in a few years' time all traces of them will be as completely obliterated as the extensive mounds which are said to have existed opposite Beni Hasan. On the east bank of the river are remains of sixth dynasty tombs at Zawyet el Mayyitîn and at Shekh Said; eleventh and twelfth dynasty tombs at Beni Hasan and El Bersheh; eighteenth dynasty tombs and monuments in the ravine behind the modern village of Beni Hasan, at El Bersheh, and further south at Tel el Amarna. Behind Dêr abu Hannes and Der en Nakhleh are enormous limestone quarries in the hills, containing hundreds of Demotic graffiti of the time of Nectanebo, as well as many Coptic graffiti and paintings. In the *débris* below the tombs at El Bersheh and Shekh Said I also found a large number of stone chisels

similar to those I discovered last year. It is probable that these boulder-chisels were used very generally in Egypt, but none have been recorded from other sites than those already mentioned. On December 21 I left camp early in the morning with Mr. Carter to visit Mr. Petrie at Haggi Qandil—a village situated about twelve miles south of El Bersheh. Returning along the hills the same evening, we fell in with a party of Bedawin. I had previously been making inquiries among the natives as to whether any tombs existed in the ravines some distance from the river. These Bedawin had heard of this, and their Shekh volunteered the information that he knew of a tourba, or tomb, some distance back and in the desert immediately east of Haggi Quandil. On my offering him a little bakhshish he promised to take me to the place. I then bargained with him to supply the necessary camels, and asked him to stay the night at our camp, so that he might not have the chance of giving us the slip, as Arabs often try to do. He stayed with me; and next morning, at sunrise, Mr. Carter and I, together with the Bedawee Shekh and four of his men, armed with guns and spears, started off into the desert for this "tourba." At four o'clock the same afternoon, after a hot day's desert ride, we sighted large masses of limestone and alabaster chips, and in less than half-an-hour were inside what proved to be, not a tomb, but the famous alabaster quarry of Hat-Nub,—the quarry to which Una went to cut the alabaster altar for his sovereign more than 5,500 years ago. This quarry was the most famous one of the ancient kingdom, and in it I found cartouches of Chufu, Mer-en-ra Pepi, and Nefer-Ka-Ra, as well as several short inscriptions.

The paper was illustrated by a number of water-colour drawings by Mr. M. W. Blackden, an Academy student, and tracings and genealogical tables by Mr. Newberry.

The President, in proposing a vote of thanks to Mr. Newberry, said that his paper was a clear indication of the immense value of the publication which would shortly be issued.

Mr. Stanley Lane Poole, in seconding, alluded to the patience and assiduity which Mr. Newberry had bestowed on the work, and to the exceedingly valuable records which he had rescued.

A vote of thanks to the President brought the proceedings to a close.

DEMONSTRATIONS ON GREEK SCULPTURE AT THE BRITISH MUSEUM.

MISS EUGÉNIE SELLERS began her sixth lecture,* which was the last of the series, by shortly summing-up the subject-matter of the preceding lectures, in which she has traced the development of Greek sculpture in relief from its beginnings in extremely realistic work, such as we find on the Harpy Tomb, through its later stages, in which increasing concessions are made to the principles of decoration, down to the sculptures of Priene, the last examples of pure Greek art, which ceased to exist before the combination of living forms into pattern was perfected.

The rest of the lecture was occupied with the examination of various sculptures in the Græco-Roman rooms, in many of which we have copies, or at least distant echoes, of the works of great masters. Such are the figures of a youth binding a tænia upon his head, which recalls Polykleitus, whose statues were made to conform to his canon of proportions; the disc-thrower, after the famous bronze statue of Myron, who is in the very act of swinging back his arm preparatory to the throw,—a momentary action, the representation of which was Myron's individual contribution to the art of his age, of which the frequent copies attest its popularity in later years; the slim figures of athletes which are echoes of the work of Lysippus, who aimed rather at the representation of Nature as it appeared to him than at the accurate reproduction of the anatomy of the human form; and, lastly, of the class of *genre* subjects, the figure of a boy pulling a thorn out of his foot, long thought to be Italian work, but now considered to be a copy of an early statue, to which parallels may be found in the homely scenes on the pediments of Olympia, pointing, perhaps, to a Peloponnesian school that affected *genre* subjects.

* For brief notes of the previous lectures, see *Builder*, pp. 141, 164, 184, 207, *ante*.

ARCHITECTURAL SOCIETIES.

DEVON AND EXETER ARCHITECTURAL SOCIETY.—The annual meeting of the Devon and Exeter Architectural Society, which is in alliance with the Royal Institute of British Architects, was held at the College Hall, South-street, Exeter, on Monday last. The President (Mr. E. H. Harbottle) occupied the chair, and, in the course of his address, observed that in the Associate section no names were yet enrolled, but seeing there was no lack of assistants and pupils possessing the necessary qualifications, no doubt this would soon be altered, especially if the society was enabled to offer some inducements to them. The forthcoming lectures should form an attractive commencement. He referred to the projected excursions by members for the purpose of visiting, as a body, architectural works of interest, and called their attention to a communication received from the Secretary of the Royal Institute of British Architects, on the subject of "Education in Non-Metropolitan Centres," in which reference was made to the efforts of the Sheffield Society to inaugurate a scheme of education in that centre. He fully concurred with the Secretary in the importance of the movement, and hoped that some such scheme might be inaugurated, with Exeter as a centre, for the south-west. Unfortunately, Exeter had not the educational advantages possessed by Sheffield, where, in addition to the School of Art, there was the Firth College, as well as a Technical School. In that town it was proposed to establish a studio affiliated to those institutions, and conducted by an efficient paid teacher or superintendent. In Exeter they must be content, for the present, at least, with a much lesser scheme by expanding as far as possible the combination of office instruction with that which might be gained at the Science and Art Schools.

EDINBURGH ARCHITECTURAL ASSOCIATION.—On the 10th inst. a meeting of this Association was held in the Architectural Hall, 42, George-street, Edinburgh. Mr. J. Balfour Paul (Lyon King of Arms) gave a paper on "Heraldry in Relation to Architecture," and, after referring to the views of Mr. Ruskin on the subject, he went on to state that the tomb of the so-called Earl of Essex in the Temple Church was the most frequently mentioned instance of early heraldry in Britain. He pointed out that it was perhaps not heraldic at all, and that the practice of bearing arms did not generally prevail in this country till the thirteenth century. In Scotland they found shields adapted to the purpose of mural decoration in the walls of Dundonald Castle, which dated from the fourteenth century, but it was not till considerably later that heraldic decoration became general. He exhibited examples of armorial lintels from Woodhouselee, Caxton Tower, Balconie Castle, Ancrum, and other houses. After describing the heraldic carvings of churches, he exhibited a fine series of armorial battlements from Harpley Church, in Norfolk, and also an interesting coat-of-arms from the Bridge of Dee at Aberdeen. Having specified the form of heraldic decoration in the interior of houses, he concluded his paper with some observations on the use and the beauty of heraldry as applied to architecture, and gave some practical hints to architects on the treatment of heraldic details. The paper was illustrated by lantern views, and at the close Mr. Paul was heartily thanked.—The Secretary read the following letter he had received regarding the proposed restoration of Linlithgow Palace:—"Her Majesty's Office of Works, 12, Whitehall-place, S.W., March 8, 1892. Sir,—I am directed by the First Commissioner of her Majesty's Works, &c., to acquaint you that the resolution of the Edinburgh Architectural Association, copy of which was forwarded with your letter of 16th ultimo, has been laid before the Board. As, however, the estimates for the ensuing financial year were closed before the resolution was received, it was too late to consider the matter further in connexion with the services of that year.—I am, sir, your obedient servant (signed), H. W. PRIMROSE." There was also read a letter from the Town Clerk of Linlithgow, expressing the desire of the Town Council to co-operate with the Association in approaching the Board of Works to have the amount proposed to be expended on the works increased.

LEEDS AND YORKSHIRE ARCHITECTURAL ASSOCIATION.—On Monday, Dr. Waite, of Wortley, delivered a lecture on "Some English Ecclesiastical Buildings." Mr. W. H. Thorpe (president) occupied the chair. Dr. Waite treated his subject chiefly from an historical and antiquarian point of view, but additional interest was imparted to the lecture by the exhibition of views of the principal cathedrals, abbeys, and priories of England, which were thrown upon a canvas through the medium of a lantern.

YORK ARCHITECTURAL ASSOCIATION.—At a meeting of the York Architectural Association, held at the Church Institute, on the 10th inst., Mr. W. G. Penty, F.R.I.B.A., past-President, delivered the first part of a lecture on "Technical Education in Relation to Architecture and Building." Mr. A. Pollard, President, presided. A discussion subsequently ensued, and Mr. Penty was heartily thanked for his excellent lecture.

SURREY ARCHÆOLOGICAL SOCIETY.

THE annual general meeting of this Society was held on Wednesday afternoon, at the offices, 8, Danes'-Inn, Strand, the President, Lord Midleton, in the chair.

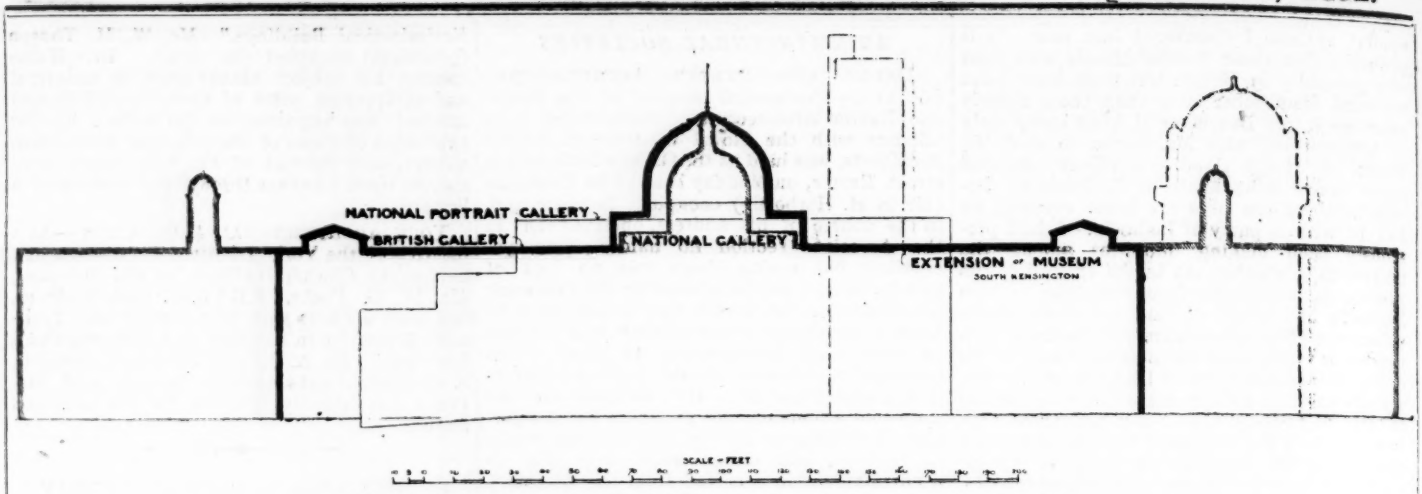
Mr. Mill Stephenson, F.S.A., one of the honorary secretaries, read the thirty-seventh annual report, which, after referring to the meetings of the year, said that Part II., Vol. X., completing the volume of "Proceedings" was issued in August last. It contained several highly interesting papers, that on the "Early History of Battersea" being an important addition to local history. The first instalment of the "Catalogue of the Church Plate of the County" also appeared, and the catalogue would be continued in the succeeding parts. In carrying out this laborious task the Society was to be congratulated upon having such an energetic worker as the Rev. T. S. Cooper, one of the honorary secretaries. To those working at genealogy the extracts from the "Surrey Wills" and the continuation of the "Visitation" would be found of value. The volume for 1892 was well in hand, and would be issued in due course. An offer of a manuscript "Calendar of the Feet of Fines for the County of Surrey from Richard I. to Henry VII." had been made to the Council, on condition that it be published in a single volume complete. In order to enable the Council to publish that important contribution towards the history of the county, it was proposed to ask for authority to borrow from the reserve fund a sum not to exceed 80*l.*, the same to be repaid by yearly instalments of not less than 10*l.* per annum. It was proposed to issue the calendar free to all members whose subscriptions were paid up to date, the Council being of opinion that some recompense was due to the members for shortcomings in the past. The Council regretted the loss of a valued and active Member by the death of Mr. C. Vade Walpole, C.B. Mr. F. A. Crisp was elected to fill the vacancy. The following eight Members of Council retired by rotation, but were eligible for re-election, viz.: Hon. G. C. Brodrick, D.C.L.; Mr. J. W. Batterworth, F.S.A.; Mr. G. E. Cokayne, M.A., F.S.A.; Lieut.-Col. Davis, F.S.A.; Mr. E. Freshfield, LL.D., F.S.A.; Major Heales, F.S.A.; Mr. W. M. Molyneux; and Mr. Ralph Nevill, F.S.A. The number of Members is 317, viz.: Annual, 218; Life, 95; Honorary, 4. During the year 23 Members had been elected, viz.: 19 Annual and 4 Life. By death, the Society had lost 7 Members, viz.: 3 Annual and 4 Life; by resignation 12 members. Gain over loss, 4. The Society was again represented at the Third Conference of Societies in Union with the Society of Antiquaries of London, held at Burlington House, on Thursday, July 23. A summary of the proceedings will be found in the next part.

The report and balance-sheet having been adopted, and the President and Officers and Council having been re-elected, the meeting was made special for the discussion of the following resolutions, which were unanimously agreed to:—

I.—"That this Society undertake the publication of a Calendar of the Feet of Fines for the county of Surrey, from Ric. I. to Hen. VII., the MS. having been placed at the Society's disposal by one of its members, on condition that it is printed and published in a single volume."

II.—"That, in order to carry out this work, the Council be empowered to borrow a sum not exceeding 80*l.* from the reserve fund, the same to be repaid by annual instalments of not less than 10*l.* per annum."

A vote of thanks to the Chairman concluded the proceedings.



Comparative outlines of Proposed British Gallery and some existing buildings.

Illustrations.

PROPOSED BRITISH GALLERY.

THE view and plan published in this number illustrate the Art Gallery as proposed to be built by Mr. Henry Tate for a gift to the nation, together with his valuable collection of modern paintings, which offer (owing to the Government being unable to find a site) has been withdrawn.

All pictures would be brought in at the back of the building and under the large gallery, for which purpose a good receiving-room is provided, as also cleaning and store-rooms, lifts being in accessible positions to convey the pictures and sculpture to the principal floor; a tramway is also formed to convey the heavy works from one side of the building to the other, and to the lifts. There are also the private and public staircases; the latter continue up to the principal floor, and also to the first and second floors and gallery round Hall, and have at the sides lavatories for men and women; these are externally placed, and can be thoroughly well ventilated; corridors also on either side of staircases lead to special rooms.

The entrance to the principal floor is by a broad flight of steps, having figures on each side (which would be emblematic of Painting and Sculpture), into a large vestibule with offices on either side for the sale of catalogues, and umbrella counter; immediately adjoining this vestibule are covered corridors, in which seats could be placed.

The general entrance to the galleries is (after passing the vestibule) into a large arcaded hall, and with a gallery round. The roof over the hall would be a cupola glazed with ground and figured plate-glass, all the columns, walls, &c., being in British marbles; the floor in centre in large marble slabs, and the parts under the gallery in marble mosaic, and in the centre of the hall a basin and fountain. The hall and adjuncts would be exclusively devoted to sculpture, while the galleries round could be used for the exhibition of miniatures and other pictures.

Not more than two (or at the most three) varieties of marbles, with gold introduced into some of the principal positions, would form the decoration.

The picture-galleries themselves would not be much ornamented, but would simply be in decorative painting in the Pompeian style, and with a good warm colour for background of pictures. The wall-space for pictures (from floor to cove) is on an average 24 ft. high, and the skylights single (blinds being provided to regulate the light).

The floors of galleries would be of concrete, with iron girders, and the top surface finished with oak parquet, while the roofs would be of iron, and fireproof doors at places shown on plan to divide galleries into sections.

The number of galleries is as follows:—

Two 75 ft. by 40 ft.
Two 70 ft. by 35 ft.
Two 50 ft. by 35 ft.
Two 40 ft. by 40 ft.
Two 30 ft. by 35 ft. { These could be used as special rooms.
One grand gallery 130 ft. by 40 ft.

On the first floor is provided the gallery round the large hall, approached from two staircases, and with two galleries for pictures. On the first floor also is a council-room, secretary's office, cloak-room, lavatories, &c., while above would be two rooms for clerks.

As to the style of the building: Necessarily a picture-gallery must be top-lighted and practically on one floor; the only suitable style is Classic; refined mouldings with Greek feeling and ornament sparingly introduced, the chief study being to get good sky outline, proper massing, good proportion, and well-broken front, and carving and figures of the best character. Panels for suitable inscriptions are introduced, and the crowning feature (at the base of the cupola) is a bronze group of figures which would be illustrative of British art.

The building would have been faced with stone in two colours, with polished granite columns to the principal entrance.

A diagram is given showing the size of the building as compared with the National Gallery, National Portrait Gallery, and South Kensington Museum new proposed additions.

SYDNEY R. J. SMITH.

INTERIOR OF HOUSE, QUEEN'S GATE.

THIS is the hall and staircase of one of the two houses in Queen's Gate, illustrated in our issue of February 13th, which have been altered under the direction of Mr. F. G. Knight. A description of the work was given when the elevations were published.

TWO SUSSEX BRASSES.

THE two brasses of which we give representations are very fine specimens, and they have also an interest apart from their beauty.

BRASS OF WM. DE ETCHINGHAM.

Etchingham Church is of much interest to the archæologist. Mr. Sharpe, addressing the Archæological Institute at the Chichester meeting (Chichester Volume, 1856) said:—

". . . . The two finest examples of entire churches in Sussex (*of the Curvilinear period*, 1315-1360) are undoubtedly those at Etchingham and Alfriston; they belong both to the latter part of the period, but differ from one another considerably in their general design. Etchingham has nave with aisles, central tower, but no transepts and chancel; its windows have all their original tracery, of good but peculiar form; the chancel retains its original woodwork and wood screen,—its sedilia and piscina, all of considerable interest, as well as two fine founder's brasses. . . . ." The screen is now gone.

The two brasses Mr. Sharpe refers to lie in the centre of the chancel; one of them is the brass now represented. It lies immediately in front of the steps of the sacrarium. It is perfect with the exception of the head, which has been wrenched away, the hilt of the sword, and the canopy, which is all gone except one base. There is an inscription on a quadrangular plate below, and another, a semicircular one, over his head, which latter sets forth that: — "This William caused this church to be entirely,—*de novo*,—rebuilt in honour of God, and of the Assumption of Blessed Mary, and of St. Nicholas. The said William was the son of James de Etchingham, Knt." The inscription below states that he died about midnight,—*entour my noet*,—January 18, 1388. This inscription is useful in arriving at the date of the building.

THE BRASS OF WILLIAM FFIENLES, CHEVALER.

This is an extremely fine brass, and it has a perfect canopy. It lies in the floor of the chancel of Hurstmonceaux Church, immediately in front of the steps of the sacrarium. The inscription is peculiar in setting forth a promise of six score days' pardon for all who shall say a "Pater Noster" and an "Ave" for the soul of the deceased. The inscription is imperfect; the name and date only are given in the illustration.

The proof of age of this William Ffienles was taken at Worthing, December 6, 1378. Among the witnesses who remembered his birth, one knew the day because it was written in the Missal of the parish church,—an early form of "registration." Another because in that year,—1357,—Giles Parker struck an arrow through his leg in the churchyard of Hurstmonceaux. Another, because the father of the said William Ffienles, then lord of Hurstmonceaux, came to his house and wished to beat him.

There is also in the chancel of this church a fine canopied monument to a descendant of this Wm. Ffienles and his son. They were the lords Dacre "of the South." F. R. F.

HOUSE, STANMORE PARK ESTATE.

THIS is the second of a series of houses lately designed by Messrs. Goddard, Paget, and Goddard, of Leicester, for Mr. Frederick Gordon, Chairman of the Gordon Hotels Company. They are situated upon the Stanmore Park Estate, a new residential district in the neighbourhood of London. Five houses of varying dimensions and a pair of cottages have already been built upon the estate from the designs of the architects above named. On Dec. 12, 1891, the *Builder* published a drawing of "Montrose," the largest of these villas. "Evian House," the subject now illustrated, is of a smaller type; but the most has been made of the space at command.

Leicestershire bricks have been used throughout; those for the facing being wire-cuts from Heather. The tiles for the roof and wall hangings are from Messrs. Lewis's Works, at Cannock Chase. Mr. John Bentley, of Leicester, was the contractor, and Mr. Rees, the estate surveyor, has acted as clerk of the works.

MOUNTFIELD, CHISLEHURST, KENT.

THE above house is composed of red bricks with portions half-timbered. The dressing to windows, porch, &c., is Portland stone; parts are tile-hung, and the roof covered with red Broseley tiles.

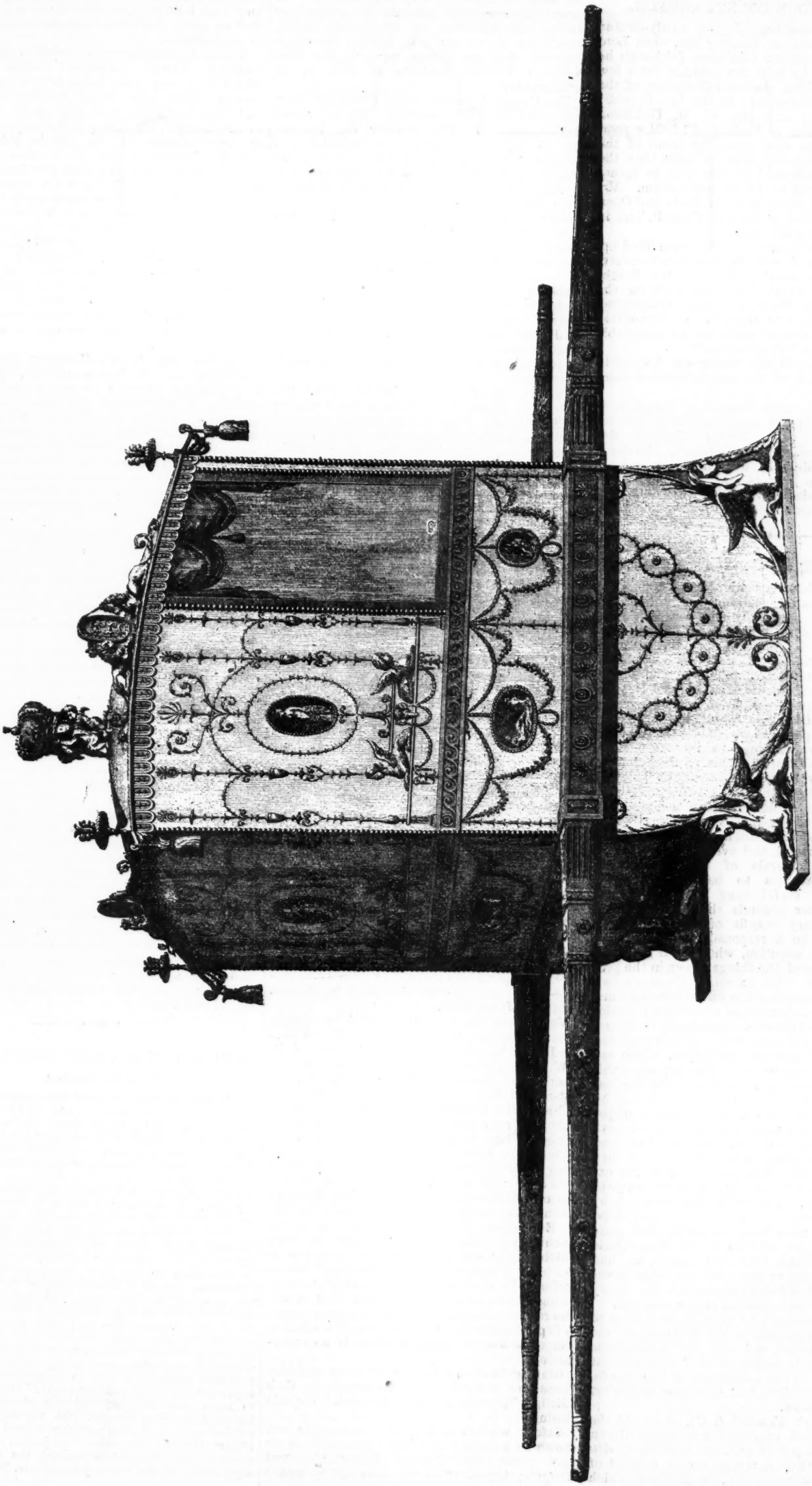
The hall is oak-panelled and the ceilings to the reception-rooms are ribbed; casements and other windows are painted white.

The kitchen is placed in front, owing to the situation of the house, which faces nearly north.

The work was carried out by Mr. W. Willett, of Camden-park, from the designs and under the supervision of the architect, Mr. W. Harber.

DESIGN FOR SEDAN-CHAIR.

THIS very graceful design was made by Robert Adam for a sedan-chair "for the Queen": it is not apparent which Queen, as we have not the date of the design. It is engraved in "Works of Architecture, by Robert and James Adam," and we give it as a pendant to the notice and illustrations of Robert Adam's works published in our issue for March 5,



Sedan-Chair.—Designed by Robert Adam,

THE LONDON COUNTY COUNCIL.

THE first meeting of the newly-elected Council was held on Tuesday last, when Lord Rosebery was elected Chairman (although he only promised to hold the position for a few weeks); Mr. John Hutton (Chairman of the Building Act Committee in the last Council) Vice-Chairman; and Mr. W. H. Dickinson Deputy-Chairman, at a salary of 1,500*l.* a year, although notice was given by some of the members of their intention to move that the salary to be attached to this post in future shall be reduced to 1,000*l.* per annum. Mr. Dickinson, as Chairman of the Parks and Open Spaces Committee on the last Council, and in other ways, did good work.

The ten aldermanic vacancies were filled up, Sir John Lubbock and Mr. Beachcroft receiving the highest number of votes. Mr. Beachcroft is a "Moderate," but his work on the Housing of the Working Classes Committee, and on the Parks and Open Spaces Committee during the last Council made him an acceptable candidate to the "Progressives."

The remainder of the sitting was devoted to the consideration of the appointment of committees.

Now that the new Council is complete, it may be interesting to mention that it includes one architect (Mr. Walter Emden), five builders (Messrs. Holmes, Keylock, Marsland, Roberts, and Stevens), five engineers, and six doctors. The lawyers are, however, much stronger numerically than either of the professions we have named.

BUILDING EXHIBITION AT ISLINGTON.

WHAT is described by the promoters as "The Tenth Annual Building Exhibition" was opened, in the half-ready and confused state which seems a chronic weakness of such enterprises, on Monday morning last, but even on Wednesday evening it was not completely ready. The tenth exhibition of the kind held in the same building it may be; but it is not the "tenth annual" exhibition in the sense that such an exhibition has been held for ten consecutive years past. As we said on the occasion of the last two or three exhibitions,—which were egregious failures so far as they claimed to be properly representative of the building trades and allied industries,—the idea that such frequent exhibitions can supply any deeply-felt or widely-spread want seems to be played out. Such exhibitions, as we have before said, may be useful, and even desirable, occasionally,—at intervals of sufficient length to enable progress to be marked. But to be really useful they should be promoted on other grounds than are involved in the pecuniary benefit of the promoters. There should be a responsible and qualified Committee of selection, who would certainly not admit some of the things shown in the present exhibition. For example, there are two or three large stands taken up with broughams, Hansom cabs, and carriages of all kinds. Again, there are several stands occupied with furniture, which might have been more usefully replaced by exhibits of sanitary appliances, which are very meagrely represented. The present exhibition is undoubtedly a better one than the last two or three which were held, but it is not by any means up to the standard which it might attain under such conditions as those we have indicated. Not that there are not here and there a few novelties to be met with, but they need looking for. The great bulk of the exhibits are things which have been shown over and over again. The Exhibition does not by any means completely cover the ground floor, and it would have been far better and more convenient if the exhibits of the Polytechnic and People's Palace Technical classes, &c., had been placed in the vacant space available downstairs, instead of being relegated to the dreary desolation of the otherwise empty galleries.

It is not necessary for us to do more than to give a brief summary of the contents of the Exhibition, which we will for convenience group together according to their kind, without any reference to the numbering of the stands, which is incomplete, and therefore somewhat difficult to follow.

Messrs. Mark Fawcett & Co. show, at the end of the hall nearest the Islington Green entrance, a couple of sections, built up *in situ* full size, of their now well-known method of fireproof floor construction, the merits of which we were amongst the first to recognise. A recent improvement consists in ribbing or fluting the haunches of the tubular lintels, which are shown made in fireclay (in which material they are being used in the New National Portrait Gallery) as well as in ordinary clay.

The Patent Adamant Stone Company show specimens of their material in its varied applications. In the *Builder* for November 28 last we described this material, and detailed some experiments which were made with it at that time, so that we need not now say more about it. Messrs. A. C. W. Hobman & Co. show specimens of their "Clifton stone" mosaic paving, which has many useful applications, and has been laid in some of the London Board schools, for corridors, &c. Messrs. Fambrini & Daniels show what they call their "Excelsior Art" concrete. Whatever may be the excellence of the material, we will not pledge ourselves as to the "artistic" treatment of some of the specimens exhibited. Mr. E. Jarrett, as agent for Mr. Erik A. Gude, exhibits some columns of Norwegian granites, syenites, and labradorites, which are worth attention.

In the department of bricks, tiles, &c., Messrs. F. Rosher & Co. have a large display of Suffolk and other facing bricks, moulded bricks, copings, string-courses, tiles, ridges, garden vases, balustrades, &c. Messrs. Ellis, Partridge, & Co., have also a good display of "Redbank" pressed bricks and "Woodville" sandstocks, together with Broseley roofing tiles and Welsh slates. Messrs. Geo. Skey & Co., Messrs. P. & S. Wood, Messrs. Carter & Co., and the Lane End Works, Ltd., are exhibitors of decorative wall and encaustic tiles, &c.

Sanitary pottery is well represented by Messrs. Thomas Smith & Co., and by Messrs. Broad & Co. The exhibits of both these firms include a great variety of stoneware pipes, traps, inspection channels, &c., too numerous to mention in detail.

Architectural joinery and decorative woodwork is represented by Mr. F. A. Fawkes, who shows a pediment-headed door, a dado, and a chimney-piece and over-mantel; by Mr. S. Elliott, who exhibits some admirably clean mouldings; by Mr. Henry Bassant, who has a good display of parquetry; and by Turpin's Parquetry Company, who show, besides parquetry, a large carved oak chimney-piece and over-mantel. The Hand-Carved Wood Company exhibit a large collection of stock patterns of various carved features.

Plaster-work is represented by the Adamant Company, Limited, who show a small erection decorated externally and internally with their "Adamant" plaster; by Messrs. S. Wright & Co., who show their fibrous slabs, with cornices and other enrichments; and by Messrs. Robinson & Co., of Carlisle. As a key for plastering we may mention the production of the British Metal Expansion Company; and as a fireproof and sound-deadening material for packing the hollows of partitions there is exhibited the silicate-cotton or slag-wool exhibited by Messrs. Frederick Jones & Co.

Ventilators are well represented by Messrs. Baird, Thompson, & Co.; Messrs. C. Kite & Co.; the British Ventilating Company; Messrs. J. D. & W. Fryer (at Messrs. Walter Monnery & Co.'s stand); and Messrs. H. W. Cooper & Co.; the last-named firm exhibit glass louvre and hit-and-miss disc ventilators. As mechanical ventilators, we may mention the Blackman and the Wing disc fans, which are shown in motion.

Machinery in motion is exhibited by Messrs. Tangye, of Birmingham; by Messrs. M. Powis Bale & Co.; by Mr. E. S. Hindley; by Messrs. Thomas Middleton & Co. (who exhibit Murray's patent brick-making machine); and by Mr. S. Eddington (who shows brick-moulding machinery). One of the machines at work which attracts a great deal of attention is Moore's "Universal Carving Machine," which performs its work by means of a small reciprocating cutter revolving at a very high speed. The results attainable with this machine appear to depend upon the operator, but the effect is somewhat flat and tame, as there is no undercutting.

Glazing is shown in two or three varieties Those we noticed were Mellowes & Co.'s "Eclipse" glazing and Mr. S. Deards's "Victoria glazing."

Safety window-sashes and casements are shown in a variety of forms; among them we may name the "Bräloo," Denbeigh's, and Hough's; they all effect the same end by means differing in detail but not essentially in principle, and there is nothing very new about any of them that we saw. Sash-fasteners are too numerous to particularise.

Amongst miscellaneous exhibits we may mention Kemp's "Unique" water-closet, which is a very good form of the improved hopper closet, with direct flushing, the pan and trap being made in one piece. As far as we observed, Mr. Kemp is the only exhibitor of water-closets in the whole exhibition. Messrs. Durrans & Co. show their patent double-pointed nails, and their man-hole covers, &c. Messrs. E. H. Bayley & Co. show a very good tip-up dustmen's or scavenger's waggon, with top-covers arranged in a better way than any we have hitherto seen. Mason's stair-treads, excellent for their durability; Aspinall's enamel, always useful; Hamilton's brushes; Tilghman's sand-blast apparatus, shown in action engraving glass, granite, or other materials; and a large trophy of tools of all kinds shown by Mr. Nurse, are among other miscellaneous exhibits which we can do no more than mention.

The Harrison Patents Company show self-sustaining gear for hoists and lifts. Harper's new portable elevator or safety scaffolding, consists of a movable platform geared by toothed wheels into the sustaining angle-posts, and capable of being raised or lowered by a man on the platform working a winch handle. The apparatus appears to have a variety of uses, especially for internal decorative work, &c., as well as serving as a lift from floor to floor. It should certainly be seen by visitors to the exhibition.

The "Homacoustic" speaking-tube, shown by the company bearing its name, is certainly a marked improvement on the old-fashioned speaking-tube, with its faulty mouth-piece and whistle, always getting out of order, and its many other objectionable features. This invention should be seen and examined by visitors to the Exhibition.

We must not bring our notes of the Exhibition to a close without mentioning that Mr. W. H. Thompson exhibits, amongst other things, a patent appliance in the shape of a safety hold-fast for the jibs of cranes. Every one is now familiar with the huge Scotch cranes now used on every large building job, and numerous have been the serious accidents caused by the chain which holds up the jib suddenly breaking. The method which Mr. Thompson adopts consists of having an automatic pawl and ratchet arrangement at the head of the jib, which comes into play when the sustaining chain breaks, causing the load-bearing chain to become locked in the head of the jib, and thus holding it up. One of these safety jibs is now at work on the building for the Royal College of Music at Kensington, for which the exhibitor's father (the well-known "Thompson of Peterborough") is the contractor. This invention is certainly well worth the attention of builders and contractors; it has only just been made public.

The Exhibition will remain open until Saturday, March 26.

SANITARY INSPECTORS' ASSOCIATION:

ANNUAL DINNER.

THE ninth annual dinner of this Association (the first since its incorporation) was held on the 12th inst. at the First Avenue Hotel, Holborn. The President (Dr. B. W. Richardson, F.R.S.) occupied the chair, the vice-chair being occupied by Mr. Hugh Alexander, Chairman of the Council. Among the principal guests were Earl Fortescue, Professor Banister Fletcher, F.R.I.B.A., Mr. Thomas Woolner, R.A., Mr. J. Robbins, Mr. F. O. Crump, Q.C., Dr. Edmunds, Dr. Louis Parkes, Dr. George Reid (Stafford County Council), Dr. Lyon, Mr. Lewis Thomas, Mr. Bonthron, Mr. Macmillan, Mr. F. W. Lyon (L.C.C.), and other well-known sanitarians. In succession to the loyal toasts given by the President, that of "The Houses of Parliament" was proposed by Mr. Crump, and responded to by Earl Fortescue for both Houses, in the absence of Mr. J. J. Colman, who had been put down to respond for the Lower House. Lord Fortescue congratulated the Association on attaining to the dignity of an incorporated society, and on the fact that they appeared so well to comprehend and to apply the motto "Union is strength." He regretted to know that harmony did not always prevail among authorities charged with the care of the public health, and when members of local bodies,—either through ignorance, prejudice, or other motives,—set themselves against the reforming suggestions of the sanitary inspectors, they would

have reason to feel glad that they had become an incorporated body.

The President, in subsequently proposing the toast of the evening, "Success to the Sanitary Inspectors' Association," commenced by referring to the question asked by the Prince of Wales in opening the Congress of Hygiene, "If these diseases are preventible, why are they not prevented?" That question had by some been thought childish, but it was one that demanded an answer, though it was found difficult to answer by those who made these matters their special study. Many diseases were preventible, but there were some which were beyond their control altogether. It was not surprising that it should be so, for the planet on which we lived, in its flight through space, was influenced by causes out of human control, and certain diseases were produced by causes that man would never know. On the other hand, there were diseases caused by famine, war, bad sanitation, bad social customs, and want of cleanliness; and no better argument could be advanced in favour of the toast than the fact that the Association whose success they pledged was formed for the purpose of controlling preventible diseases. It would interest some of those present to know that it was not only in this but in other countries that the importance of the work of that Association was meeting with due appreciation. A great French Association, the Society of Hygiene, had invited the Association to visit Paris next June, where the Municipal Council and other public bodies would co-operate with the Sanitary Society, and would entertain them at a banquet after showing the members everything that was best worth seeing by men of their profession. He had given reasons to show that a great amount of success had been already achieved, but they must not rest there. They had obtained by the charter the status of a teaching body, and they must both learn and teach. They must have a school, and that school they should have a real, scientific, and not a *dilettante* school. They must have a home, and some person would some day be generous enough to give them one, or would help them to get it. The toast was then drunk amidst cheering.

The toast of "The President" was proposed by Mr. Macmillan, who said that on first making the acquaintance of the Association at the previous annual banquet, he had been much impressed with the importance of the work of the Association, and what he had since learned of it deepened that impression.

Dr. Richardson replied to the toast. He said that whatever might be his own opinion as to the eulogies bestowed upon himself by his friend Mr. Macmillan, he had no hesitation in declaring his agreement with the high estimate he put upon the work in which they were all engaged. Quoting two lines of his own, founded on a Classic text, the President said:—

> "Men never nearer to the gods attained
> Than in the task of giving health to men."

He subsequently proposed "Science and Art," coupling with the toast the names of Dr. Louis Parkes (instead of that of Sir J. Crichton Browne, absent through illness) and Mr. Woolner, R.A.

In replying for "Science," Dr. Parkes said he had a due sense of the honourable nature of the task, and he was personally grateful for the generous words of their President in encouraging him to hope to worthily succeed a famous father. The greatest *desideratum* of the time was that a closer spirit of unity should exist between the two branches of the sanitary service. Between the Medical Officers of Health, charged with the task of curing the sick, and the Sanitary Inspectors, charged with the task of preserving the health of those who were well, there ought to be the most complete *entente cordiale*.

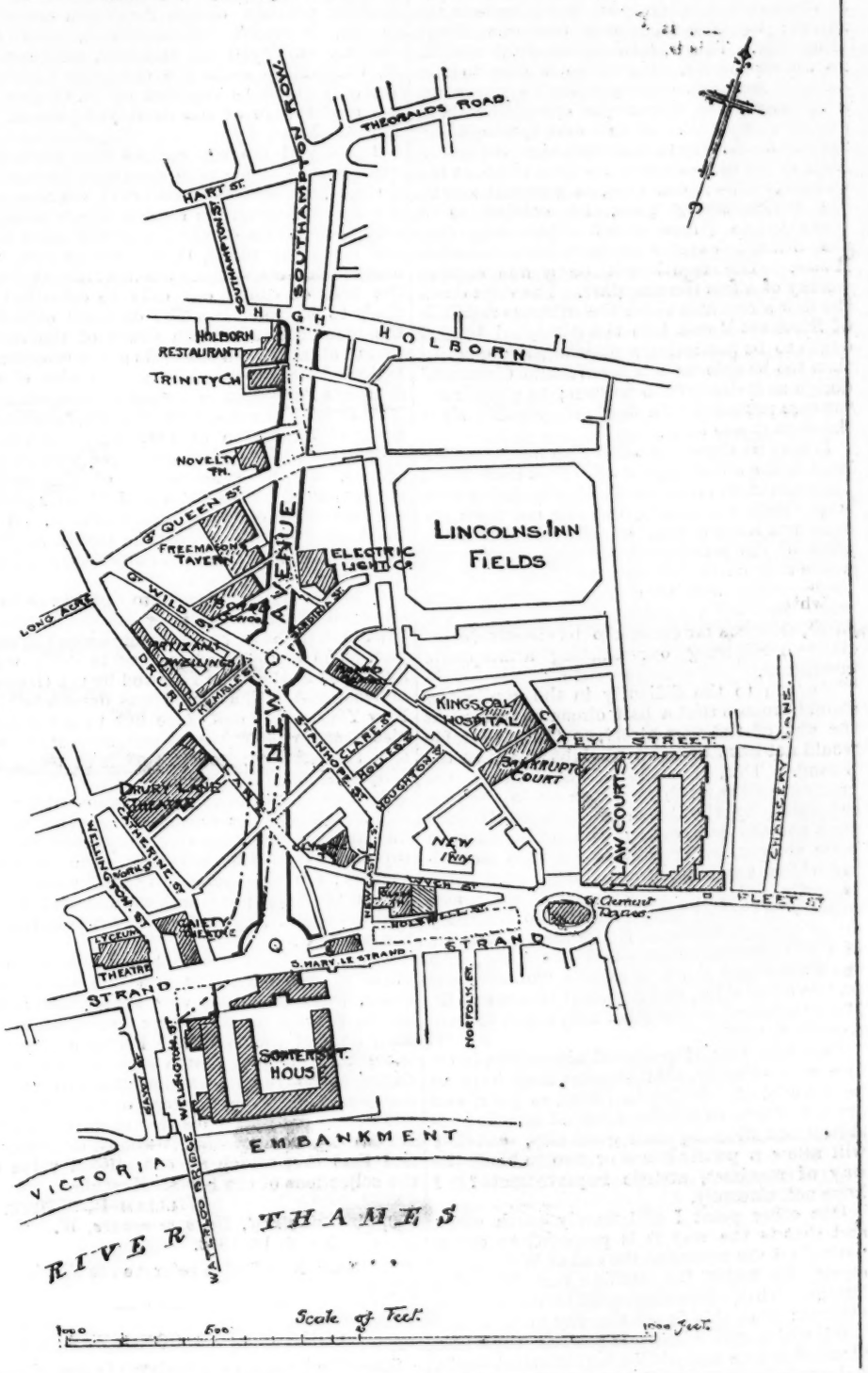
Mr. Woolner, R.A., said he could perceive the beneficial influence of work such as that of the Sanitary Inspectors' Association upon art and upon the community in general. There could be no question that when persons were healthy they were larger and better shaped, and their faces were more comely. People now were less in sympathy with the poetical idea which was once accepted as a characteristic of beauty—that the face should be "sicklied o'er with the pale cast of thought," than with that of our greatest living poet when he spoke of "Daughters of the plough, blowzed with health." If their labours did not yet produce the splendour of colouring of the old Venetian paintings, their tendency was in that direction, for the paintings of our day were more ruddy and splendid in colour than in the days of his youth. Coming suddenly to a practical point, Mr. Woolner said he wished they would help the community to do away with dust-holes. When they went to Paris they would find no trace of the unclean thing. There the dust was brought from the houses by ten o'clock every morning, and by eleven o'clock it had disappeared. He thought one little ounce of practice was worth a good deal of theory.

Among other toasts were "The Executive," proposed by Professor Banister Fletcher, and responded to by Mr. Hugh Alexander; and "Local Government," proposed by Mr. E. Lewis Thomas, and responded to by Dr. Geo. Reid and Mr. J. Bonthron.

PROPOSED THOROUGHFARE · STRAND TO HOLBORN.

New Avenue shown thus ——

As suggested by Improvements Committee — · — · —



Correspondence.

To the Editor of THE BUILDER.

"PROPOSED THOROUGHFARE—STRAND TO HOLBORN."

SIR,—Any proposed alterations affecting London streets must be of interest to architects and lovers of London alike. I hope, therefore, that you will allow me to draw attention to what I consider to be a great fault in the scheme suggested by the "Improvements Committee of the London County Council" for the "Proposed new thoroughfare from Strand to Holborn."* I am aware that the project has been abandoned for a time, but as it is probable that something of the sort will be done before very long, I trust you will be able to find space in your journal for this letter and the accompanying plan.

Of all the large new thoroughfares which have been formed in London during the last few years, there is not one which has a decent beginning or a decent ending. If this new street is to be "gently curved," as suggested, half into the Strand, and half into Catherine-street facing a portion of the side of the Gaiety Theatre, it can only result, I feel certain, in one more architectural failure.

"The object of bending the street in this direction is to obtain an easy gradient" (I quote from the report), a laudable object, and one to be considered, no doubt, but not, I venture to think, the *only* one when planning a new and important thoroughfare like the one suggested. Its effect architecturally surely ought to receive some consideration. This portion of the scheme is to be condemned not only because it would result in another of those shapeless spaces to which the eyes of Londoners are, unfortunately, becoming so accustomed, but also because, by slightly altering the direction of the street, a noble and dignified termination can be obtained, and without, I believe, any great difference in the gradient.

Somerset House is one of the few fine public buildings that London possesses; unfortunately

* Published in the *Builder*, October 19, 1889.

the Strand front is so hemmed in at present that it is impossible to see it properly. Any scheme, therefore, which touches that part of the Strand and does not take into consideration the possibility of improving the view obtainable of that fine building carries its own condemnation. But this scheme goes further. If carried out it would utterly prevent any attempt at improvement in this respect being made in the future; in fact, it ignores Somerset House altogether. This is, I think, the great mistake its authors make. They take trouble to plan an ugly, inartistic ending to their street, when a grand artistic one can be obtained without any trouble at all. If this new thoroughfare, instead of curving to the west, were brought a little to the east,—barely its own width at the widest point,—it can then, as you will see by the accompanying plan, be carried in a straight line (from Great Wild-street) into the Strand, exactly central with Somerset House. The result will be a fine ending, worthy of a fine thoroughfare. The vista down the new street and under the entrance vestibule of Somerset House into the courtyard beyond ought to be particularly pleasing, and one will then too be able to see Sir William Chambers' design as it deserves to be seen; to greater advantage probably than has been possible since the days it was built.

It may be urged that this plan necessitates a bend in the street higher up. This must be so, I am afraid, in order to avoid interfering with large existing buildings, but I do not think the drawback a really great one. The most pleasing parts of the principal Boulevards of Paris are where they curve, following the lines of the old fortifications, and in this new avenue there would still be a straight vista of nearly 400 yards, which is far enough to be effective, especially considering our existing atmospheric conditions.

To turn to the difficulty in the gradient, I should propose that a half circus be formed at the end of the new street, so that the traffic would not have to go up at right angles to the Strand. This, I believe, would bring the gradient pretty much the same as in the plan suggested by the Committee. Even if such were not the case, even if the gradient were a little steeper, better that surely than an ending which it would be impossible to treat satisfactorily. A large open space would consequently be formed here,—the Strand is already wider opposite Somerset House than it is at the end of Catherine-street,—and this space, with the Strand and the new avenue branching out on two of its sides, and Somerset House and St. Mary-le-Strand on the other two, ought to have a really fine effect.

I am told that if proposed alterations interfere with existing public-houses they have to be abandoned. Is London, then, so poor, and are Londoners so indifferent to all artistic considerations affecting their great city, that they will allow a public-house or two to block the way of manifest, artistic improvements? I hope not, sincerely.

One other point I will merely touch upon, and that is the way it is proposed to cut a "slice" off the houses at the end of Wellington-street, to assist the traffic over Waterloo Bridge. That something must be done here is evident; that this is not the way to do it is, I trust, still more evident. If possible, the whole block of houses east of Wellington-street ought to be swept away, and Somerset House allowed to stand free; if that be impossible, at all events some arrangement better than the one "recommended" can surely be managed.

FRED. M. SIMPSON.

18, *Cowley-street, Westminster.*

M. CHIPIEZ'S MODEL OF THE PARTHENON.

SIR,—A "Note" published in the *Builder* on the 13th ult.,—an extract from which appeared in the R.I.B.A. *Journal* on the 10th inst.,—referred to a model of the Parthenon, which is now at New York, but which was executed in Paris, two or three years ago, under the direction of M. Chipiez; and the writer based his remarks upon it from a set of photographs received from America. Having stated that the model appeared to be (1) far from accurate, he criticised (2) the sculptural additions introduced by the restorer, described (3) the entasis of the columns as greatly exaggerated, and stated (4) that the sculptured metopes were in their wrong places, adding (5) that the model was a curious example of French lightheartedness in matters of the kind, as a French *savant* could not be supposed to learn anything from English sources.

From a written statement by M. Chipiez, which he has forwarded to me, I have learnt:—

1. The Committee in New York, by whose instructions the model was made, appointed a sculptor to prepare a reproduction of the existing portions of the Parthenon according to Mr. Penrose's measurements, and this sculptor employed an architect, unknown to M. Chipiez, to make the necessary drawings. The only drawings supplied by M. Chipiez for the model were of the destroyed parts of the Parthenon.

2. Many of the restorations thus made were "creations." The entire system of roofing was restored, and so were the doors of the Naos and the Opisthodomus. In France, where innumerable restorations of the Parthenon have been and are being made, it is usual to say, "so many architects, so many different restorations," the best of which can only be described as likely to be possible. The declared object of the munificent American donor of the model was to obtain, not a scientific study of archæological restoration, but a general idea of the complete Parthenon as a work of architecture.

3. The model was exhibited in the Paris International Exhibition of 1889, and the photographs then taken of it, compared with photographs, to the same scale, of the actual monument in Athens, show,—M. Chipiez states,—an entasis of column almost identical. If in the American photographs the entasis appears exaggerated, it is due to circumstances beyond his control.

4. The sculptor referred to appears to have arranged the metopes after Michaelis, whose book is thought to be an authority on the subject. The metopes, when fixed in Paris, were numbered in the order followed by the German archæologist. The model was despatched to New York, not in one piece but in a hundred pieces, and put together again after its reception in that city; for the results of which M. Chipiez is not responsible.

5. Both M. Perrot (who has also written to me) and M. Chipiez express themselves much hurt at the assumption that they could not be supposed to learn anything from English sources; and they point to the five volumes of which they are joint authors, and which are well known in England, as direct evidence to the contrary.

I feel sure, from your habitual courtesy and sense of fair play, that you will allow this letter, which is written with the authority and at the request of M. Chipiez, to appear in an early issue of the *Builder*. Permit me, at the same time, to add that a slight acquaintance during many years with distinguished French architects, and with the text of their literary works, has convinced me that their respect for British Classical learning is almost deferential, and that they attach an exceptional value to the collections of the British Museum.

WILLIAM H. WHITE.

9, *Conduit-street, Hanover-square, W.*

March 16, 1892.

*** See "Note" with reference to this letter, p. 219.

COKE-BREEZE CONCRETE.

SIR,—The apparent uncertainty of some of your correspondents on the subject of concrete induces me to repeat what I have formerly said thereon in your columns.

Several years ago I put up, in some large blocks in London, about sixty floors of coke-breeze concrete, without joists and with a bearing (in the majority) of between 12 ft. and 14 ft. the narrow way of the rooms. The concrete was laid 7 in. thick, and had 2½ in. by ½ in. iron bars buried 18 in. apart on edge an inch above its soffit, the ends being threaded on continuous iron rods, built into the walls. Each floor was made as the walls reached the required level. A cement ceiling and floor-surface afterwards increased the thickness to 9 in. For a plaster ceiling and wood floor I would have made the concrete itself 9 in. thick. These floors set so as to form single slabs, and a heavy weight, accidentally dropped on one of them from a great height during the building, merely cut a clean hole, and did no other damage. The roofs were similar, but asphalted on top. Their only fault is that they allow the rooms next under them to get unusually cold in winter, on account of the rapid radiation of heat through the single solid slab; and if I were repeating them now, I should make them double, putting a second skin of concrete 3 in. or 4 in. thick on rough boards, on filtets resting on the main slab. These boards would have to be left there, as they could not be got out.

I have also made a concrete floor and roof, each 60 ft. by 20 ft. between the walls, without joists or girders. The bars were only a foot apart, but rather smaller, and the aggregate was mainly broken brick (new hard bats). I would never trust so heavy and brittle a material as river ballast or shingle for floors and roofs.

I think it is best to put up the floors along with the walls, in order that the bars and the rods on which they are threaded may be securely built in. The bearing of the concrete itself is of no consequence, as, even if it merely abuts against the walls, it becomes absolutely one with them so soon as it has set.

The walls of the former building were mainly of concrete made of Thames ballast, and, on one occasion, when the British workman, with his usual thoughtfulness, had made a large fire in a stoveless chimney-opening, the ballast concrete was damaged, and some woodwork on the other side of the party-wall got charred. But I never heard of any trouble with our coke-breeze hearths. I remember to have been told by an experienced concreter that, where one wished to make floors especially proof against fire-effects, it could be done by mixing flowers of sulphur with the cement. I think the proportion named was one measure of sulphur to twenty of cement. This might be worth trying for hearths, if there is any difficulty.

It is strange to me that we go on making shrinking, rotting, combustible floors and roofs of foreign materials, for which we have to pay away hard cash, whereas we have at home all the means for making such as will neither shrink, rot, nor burn, and that cost scarcely more than the others. In Chinese pigsties one could account for it as done with a view to cheap roast-pork, but we do not eat our roast humanity.

WILLIAM SIMMONS.

Rosebank, Enfield.

SIR,—Your correspondent, "Contractor," says (page 210) "be sure not to use too much water." Some of your readers might, from this remark, go to the other extreme and not use enough. It should be borne in mind that coke-breeze in itself absorbs a great quantity of water, and that, therefore, more water is required, in fact that it should be more sloppy than would be right for shingle concrete.

There seems to be some doubt as to the capability of coke-breeze concrete to resist fire. I have no experience in this respect myself; but a builder told me the other day that he once set a stove with coke-breeze concrete, made, however, with lime, not Portland cement, and it had to be taken out and reset with brickwork, because the coke-breeze concrete got red hot and set the skirting on fire.

C. F. M.

THE ROYAL COMMISSION ON LABOUR.

SIR,—To avoid mistakes cropping up, I beg to say most emphatically that my clear and distinct contention in to-day's evidence before the Labour Commission — ("Building Trades of England" Section)—was as to the vicious system of "general contracting" for works of magnitude. I explained that a superintending architect could "let out" each branch of the works to a master workman, or, better still, price the work by surveyor's valuation and hold the master workman responsible for quality of materials and workmanship.

By this means the skilled workman of energy and enterprise and with a small capital could enter the field as a master workman in his proper branch of trade.

I know of more than one architect of eminence who began by being a skilled workman first. This 9d. or 10d. per hour rule of payment for one and all is deadening in its effects upon workmen. The most skilful and industrious are discouraged when their pecuniary reward is no greater than that received by the rawest, slowest, and most incompetent of their fellow workmen.

In Italy and the United States of America the "master workman" is well-known and appreciated, and I venture to say that it will be a happy day for England when we return to that grand old custom of trade under which our noble old abbeys, cathedrals, palaces, and castles were erected, and remain to us standing evidences of beauty and strength in construction.

F. A. MOORE.

March, 15, 1892.

PAYMENTS ON CONTRACT.

SIR,—May I, in your columns, ask a question of some importance?

A contract is signed and sealed between a School Board and a builder to carry out certain works (with clause as to extra works, &c.,) "to the satisfaction of the architect."

Payment is to be made in the usual manner during progress, leaving 20 per cent. (say) to be paid "two months after completion."

The architect gives his "final certificate," including his assessment of extras on completion. The builder thereupon claims payment of the same.

Question: Is he entitled to payment before the two months have elapsed, as some allege, but as I fail to understand? If so, it seems to me that the

certificate does more than that great friend to architects, Louis XIV., who changed the gender of a noun, for it abolishes an appreciable portion of time!

I send you my name, but for this purpose initials will suffice. D. Y. B.

HALIFAX MODEL DWELLINGS COMPETITION.

SIR,—I was interested to read the letter in your issue of last week relative to this competition, more especially as four days before I had written to the Institute for their "Suggestions" on competitions, and forwarded these at once to the Corporation, clearly stating that unless the conditions were materially altered I should be unable to send in a design. If all who have applied for the "Conditions" did likewise, whilst under the stimulating influence of their disgust at the clauses, it would be well for the profession.

LOCKE WORTHINGTON.

VARNISH.

SIR,—I should be much obliged if any of your numerous readers would be good enough to advise me, through your columns, as to the best varnish to use over delicate and artistic internal paint work; a clear and transparent varnish, that will not in any way change or dull the finishing tints, but, at the same time, one that is hard and durable, and easily applied.

Copal varnish or French oil varnish make a marked difference in the tone of the light tints, so much used at the present time. INQUIRER.

The Student's Column.

WARMING BUILDINGS BY HOT WATER. XII.

FORCING-PITS OR BEDS (HORTICULTURAL WORKS).

IN every horticultural work of any pretension there will be required a pit, or bed, with pipes beneath it, for forcing purposes, or for the growth of pine-apples, &c. The term "pit" is not intended to convey the idea that it is a place dug in the ground, as this is rarely, if ever, the case. Fig. 43 shows

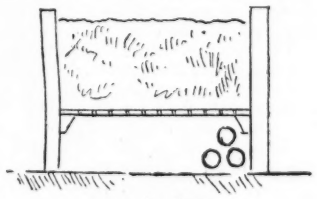


FIG. 43.

the thing in question. This represents a structure of wood, with a false bottom supporting about 18 in. of earth. The bottom is perforated. The heat is applied to this by three or four pipes run underneath as shown, or should the bed be standing alone, away from the general run of pipes, a branch might be carried to and under it, as fig. 44 (plan). The

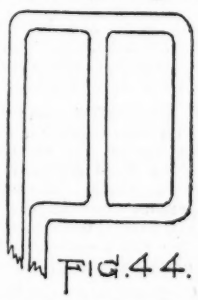


FIG. 44.

object of this bed is the cultivation of those things which require a bottom heat, that is a heat to the earth in which the roots exist, as well as a warm atmosphere to the parts above ground. It is the same result as we obtain by putting manure at the bottom of a bed, except that in the latter case the heat is not so regular and uniform, nor can it be regulated when required.

Sometimes a gardener will signify a preference for the pipes being carried through the material of the bed itself. When this is required the pipes are run at the bottom, and first well covered with clinker and rough material, as fig. 45. If the pipes were a distinct branch, an air tube would require to be carried up through the earth from the highest extremity as shown.

When these beds are arranged for cucumbers, &c., they usually extend along the side of the house, as fig. 46; this permits of the proper training of the vines. In a span house the side will be governed by the gardener's wishes, but in a lean-to it would in nearly every case be

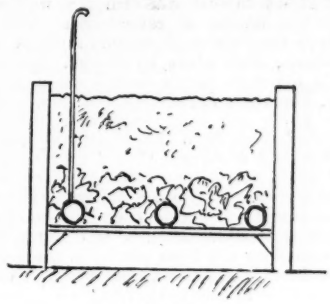


FIG. 45.

along the front furthest from the wall. If the pipes are simply carried underneath, as shown in the last illustration, they contribute heat to the bottom of the bed, and also to the atmosphere generally. This is not so effective for

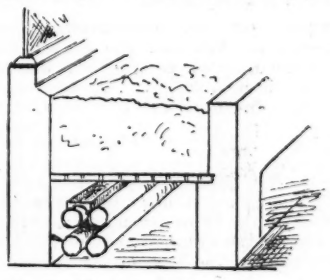


FIG. 46.

the beds as when the exit of heat from beneath is less free. Messrs. Messenger & Co., specialists in this work, have an ingenious plan of affording bottom heat to pits, yet afterwards utilising the air for top heat. Fig. 47 illustrates the

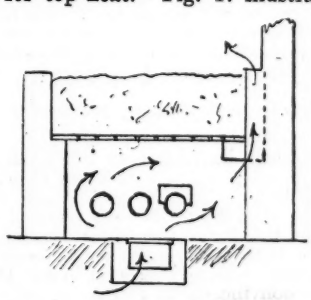


FIG. 47.

method, and it will be seen that the heat does not so readily pass up from the bottom as to prejudice the heating of the bed.

When expense is not of primary importance, it is often arranged for pipes to run under the beds for bottom heat, and additional pipes run round the edge of the bed for top heat, or heat to the atmosphere.

For the growth of many things it is the practice to have a tank of water beneath the pit or bed, as fig. 48, the object being to afford abund-

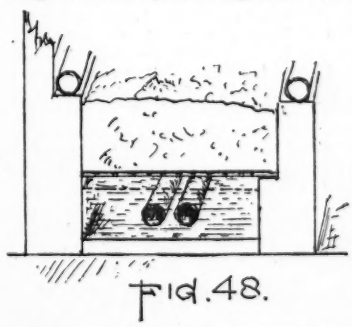


FIG. 48.

ance of moisture of a warm temperature, or, in other words, a warm atmosphere fully saturated with moisture. To effect this, pipes have to be run beneath the surface of the water as shown, and should they be a branch by themselves, an air-pipe must be carried up through the bed. In the construction of this bed conveniences for adding water to the cistern as it evaporates, &c., have to be provided.

Means to impart a sufficient moistness to the atmosphere have always to be provided in these works in conjunction with the hot-water apparatus. It requires to be explained that as air is raised in temperature it has an increased capacity for water in equal ratio with its increased heat. In fact, it has not only greater capacity but a positive need of water, for if no means are provided by which moisture be added in sufficient quantity, the air will help itself from the surroundings. This proves that the air actually requires the moisture, and it would never do to have it furnished from the earth and the very plants which are in particular need of it themselves.

Now it is not only necessary to provide for what we may term the normal saturation of the air as it increases in temperature, but it is necessary to furnish a superabundance of this moisture, particularly in fern-houses, as an instance, which usually require an atmosphere heavily laden with water. Provision should be made in every house for this purpose, although it is not always required. In some instances, with grapes for example, moisture is required at certain times but not at others.

The provision for saturating the air is usually in the form of a trough fixed on one of the hot-

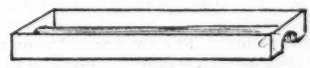


FIG. 49.

water pipes. It can be a trough to lie on the pipe as fig. 49, or the pipe can be procured with the trough cast on it as fig. 50. The latter is generally used; the former being more in request when the amount of ordinary trough pipe is afterwards found insufficient. If a

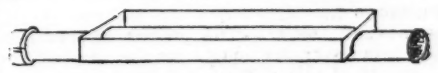


FIG. 50.

gardener cannot conveniently get a cast-iron trough of this description to lay on his pipes, a local whitesmith can make one in zinc which will prove just as effective.

There is a trough or channel-pipe, made as fig. 51, but this is not in common request, as it

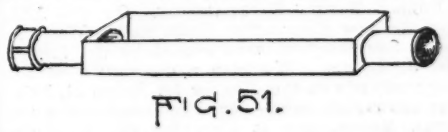


FIG. 51.

can only be placed at the highest point in an apparatus (level with the supply-cistern), otherwise the water would overflow or escape from it. It will be noticed that this trough differs from the others by being practically an open top pipe, the water flowing from the pipe at one end into and through the trough, making its exit at the other end. A pipe like this has sometimes been placed at a high point, and used as a supply-cistern.

It should have been mentioned that the tank beneath the bed, fig. 48, has very frequently a tap in it, which the gardener applies to for the warm water needed in watering his beds and delicate plants. If this be so, a little extra pipe would be needed, so as to more quickly heat up the fresh water that is introduced.

SURVEYORSHIPS.

SOUTHAMPTON. — Major W. B. G. Bennett, Borough Engineer of Southampton, who met with an accident three months ago, has now so far recovered as to able to resume his duties, which have been carried out during his absence by the Assistant Borough Engineer, Mr. A. D. Greatorex. The Borough Surveyor of Southampton has been instructed by the Hartley Council to prepare plans for the erection of an engineering laboratory in connexion with the Hartley Institution.

DORSET.—Mr. C. E. Ponting, F.S.A., Lockeridge, Marlborough, who holds a similar appointment for the Archdeaconries of Wilts and Bristol, has been elected Surveyor for the Archdeaconry of Dorset.

OBITUARY.

PROFESSOR FREEMAN.—The *Times* of Thursday announces that Professor E. A. Freeman died at Alicante, in Spain, on Wednesday morning, from small-pox. In addition to his work as a historian, he will be well known to many of our readers for his writings on architectural subjects. He was approaching his seventieth year.

GENERAL BUILDING NEWS.

NEW COLLEGE, GLASGOW.—St. Peter's College, New Kilpatrick, the gift of Archbishop Eyre to the Catholics of the arch-diocese of Glasgow, has just been completed. The new college occupies a situation at the junction of the Dumbarton and Stirling roads. The building, which is four stories in height, is in the domestic Gothic style. The principal front, including the two wings, measures 190 ft.; to the copestone the height is about 70 ft.; and from the centre rises a flèche, 142 ft., to the top of the vane. The main entrance leads into a hall, open to the top of the central tower. To the right and left runs a corridor, repeated on the several floors, which are reached by stone staircases at either end of the building. On the ground floor, in the central block, are waiting-rooms, reception-rooms, and four class-rooms. The west wing, which measures 78 ft. in length by 36 ft. in width, is meantime set apart as a dining-hall, kitchen, and servants' apartments; while the east wing, measuring 90 ft. by 36 ft., will be fitted up as a temporary chapel. The scheme includes a chapel to be erected to the east of the main building, and a refectory, kitchen, and servants' rooms at the rear to the north; but the construction of this section of the work is meanwhile delayed. On the first floor of the college is a suite of rooms for the Archbishop, and adjoining are rooms for the rector. In the back portion of the main block are four class-rooms. The western wing is occupied chiefly for library purposes, and the eastern is fitted up as students' rooms. The professors' rooms are in the front portion of the main building, and on this floor are four class-rooms, the remainder of the space being devoted to rooms for the students. On the third floor the chemistry class-room and laboratories are placed, and here also is the billiard and recreation-room. The entire cost is estimated at about 25,000*l*. The contractors for the work were Messrs. John Devlin & Son, and Mr. Thomas Geggie represented the architects, Messrs. Pugin & Pugin. We gave an illustration of the building in the *Builder* for September 21, 1889.

PROPOSED RECONSTRUCTION OF MARKET HALL, ABERTILLERY, MON.—The present market hall being found very inadequate for the growing requirements of this district, a company has been formed to acquire and reconstruct it. It is proposed to considerably extend the market, erect shops and offices, and to build a hall to accommodate 1,500 people. Plans are being prepared by Mr. Alfred Swash, architect, of Newport, Mon.

SCHOOLS, BEARPARK, CO. DURHAM.—The Board schools here are shortly to be altered and enlarged for the Elvet St. Oswald School Board by Mr. H. T. Gradon, architect, Durham.

PUBLIC BATHS, SOUTHAMPTON.—On the 10th inst. the new Corporation Baths on the Western-shore, Southampton, were opened by the Mayor, Mr. J. Lemon. We gave a description of the new buildings in the *Builder* for March 21, 1891. The contractors are:—For the sea-wall round the baths, Messrs. Roe & Co.; for the buildings, Messrs. Morgan, Isted, & Morgan; for the iron roofs, Messrs. Roe & Co.; and for heating apparatus, Messrs. Bradford & Co., of London and Manchester. The ornamental ironwork has been supplied by Messrs. Macfarlane & Co., the electric bells by Messrs. Sanby & Co., the fittings and furniture by Mrs. Horseman, Mr. Freeley, Messrs. Hart & Co., the Provincial Furnishing Company, and Messrs. Permain & Co., of Southampton. The buildings have been designed and erected under the superintendence of the Borough Surveyor, Mr. W. B. G. Bennett, C.E., assisted by the Assistant Borough Surveyor, Mr. A. D. Greatorex. The open-air swimming-bath has been made ready for use, and new dressing-boxes have been provided by Messrs. Roe & Co., and a boundary-wall is being erected.

PRESBYTERIAN CHURCH, NEWTONBREDA, NEAR BELFAST.—The opening services in connexion with the Newtonbreda new Presbyterian Church took place on the 13th inst. The new building has been designed by Mr. Vincent Craig, of Belfast, and erected under his direction by Mr. Robert Corry, contractor, of Donegall Pass. The style of the building, which has been constructed of Scrabo stone, with red cut stone dressings, is Gothic, of the Early English period. Its width at the transept is 78 ft., and its length 92 ft., while the chancel is 13 ft. long and 17 ft. wide. Situated at the north-east corner is the spire, which when completed will be 150 ft. in height. Accommodation has been provided for 600 sittings. In the front there are two entrances facing Ormeau-road, and on the north side a third entrance is provided from Knock-breda-road. The buildings at the rear include a session-room, vestry, space for organ-bellows and motor, a ladies'-room, lavatory, and heating apparatus accommodation. In the interior the columns are of cut stone, with moulded caps, and spring arcade arches dividing the nave and side aisles. The transept and chancel arches are of the same materials. Above the level of the side aisles runs a row of clearstory windows. The woodwork in these windows is of polished pitch-pine. The same has been used in sheeting the ceiling, which has the constructional timbers exposed to view. The heating is by Musgrave's high-pressure system. Two ornamental windows have been supplied by Messrs. Carlisle & Wilson, while the plumbing and gas-fitting have been done by Mr. John Dowling, both of Belfast.

CONSECRATION OF CHURCH, TOTTINGTON, LANCASHIRE.—On the 10th inst. the new Church of St. Mary, at Hawkshaw-lane, Tottington, was consecrated by the Bishop of Manchester. The new building is in the thirteenth-century style of Early English Gothic, from plans by Messrs. Maxwell & Tuke, of Manchester, which have been carried out by Messrs. Thompson & Brierley, builders, of Bury. Yorkshire stone has been employed, backed by rubble, with facings from the Holcombe quarries. A nave 65 ft. and a chancel 17 ft. long give a total length of 82 ft. A tower is to be erected at the north-west corner. At present the tower is carried only to the eaves and surmounted by a bell turret. The church is entered through the tower, and a large western door has been placed in the building to be used for exit on special occasions. The side windows are filled in with cathedral glass. An open timbered roof in one span covering the nave is of varnished pitch-pine, and the benches for the worshippers are of the same material. The pulpit and font are of Caen stone and alabaster. On the north side of the chancel is the organ chamber, and the vestry is reached through an arch at the south-east corner of the nave. Choir stalls have been presented by the girls' Sunday school. Accommodation is provided for 364 worshippers. The cost of the church is about 3,500*l*.

COMPLETION OF ST. CATHERINE'S CHURCH, CARDIFF.—On the 9th inst. the corner stone of St. Catherine's Church, King's-road, was laid by Mrs. Vaughan, of Llandaff. Up to the present time, only a portion of the nave has been completed, but funds being now forthcoming, it has been decided to complete the chancel and east end, with vestries, organ-chamber, and side chapel. The style is Early English, and the plans from which the work will be executed have been prepared by Messrs. Kempson & Fowler, architects, of Llandaff, the total cost of the added portion of the building being about 2,000*l*. The existing building is composed of three bays out of a total of five, which will form the completed church. The chancel will be 40 ft. in length by 24 ft. in width, and opening from it through arcade arches will be a south chancel aisle or mourning chapel, 20 ft. long by 16 ft. wide; an organ-chamber and vestry 24 ft. by 20 ft. in all. The design provides for the chancel being rectangular in form, with a three-light eastern window and a two-light window in the east end of the chancel aisle. The floor will be finished in tiles. The outer walls will be of Treforest stone with Bath stone dressings and mullions. The contract has been let to Mr. Councillor W. Symonds, of Canton. When finished, the church will provide sitting accommodation for about 836.

THE PROPOSED EXTENSION OF THE BATH PUMP-ROOM.—A meeting of the Bath Town Council was held on the 15th inst., the Mayor (Mr. J. S. Turner) in the chair, when the debate was resumed on the report from the Baths Committee recommending the addition to the pump-room and the covering in of the Roman remains, estimated to cost 45,000*l*., as mentioned in last week's *Builder*, p. 212. After a long discussion, the amendment moved by Alderman Gibbs was put. Thirteen voted for and 35 against. The adoption of the report was then carried by 31 votes to 15.

ADDITIONS TO THE "MORNING POST" OFFICES.—Considerable additions are being made to the offices of the *Morning Post*, and a new block of buildings is to be added at the corner of Wellington-street and the Strand. Mr. H. O. Cresswell is the architect. The whole of the floors and both staircases are to be fireproof, on "The Fawcett" system. Messrs. Mark Fawcett & Co. are also doing the constructional ironwork.

NEW INFIRMARY BUILDINGS, LEEDS.—On the 12th inst., on the invitation of Mr. George Corson, the architect, the members of the Leeds and Yorkshire Architectural Society were shown over the new buildings which have been erected in connexion with the General Infirmary. The cost of the building, which, it is said, will in a few weeks be opened for the reception of patients, will be about 35,000*l*. Mr. Corson explained all points of interest, and at the close of the inspection, a cordial vote of thanks to that gentleman was passed on the motion of Mr. Thorp, and seconded by Mr. Watson. The new buildings consist of four separate blocks,—namely, the ward pavilion, the out-patients' department, the pathological department, and the isolation wards. The new ward pavilion follows, externally, the design of the original building, and is connected with it by a screen of four open arches, of brick and stone, supported on polished granite pillars. The internal arrangement differs from the original wards. Instead of one large ward on each floor, with staircase at the end, the staircase is placed in the middle, dividing the wards There are on each floor one ward, 65 ft. long by 27 ft. 6 in. wide, arranged for sixteen beds; and another 37 ft. long by 27 ft. 6 in. wide, for ten beds. These wards are in height, from floor to ceiling, 18 ft. on the ground floor, 17 ft. on the first floor, and on the top floor, which has an arched ceiling rising into the roof, there is an average height of 22 ft. There are also on each of these floors a special ward for one patient, and a nurse's room. Bath-rooms and water-closets are also provided, the baths being of earthenware, white glazed out and in, without casing, and standing free in the middle of the room. These were made by the Farnby Company. The water-closets were supplied by Doulton, of Lambeth. Over the nurse's room and small wards, &c., an entresol is arranged, one in each story, containing a small special ward and a room for patients' clothing; and a water-closet. Altogether there is provision for eighty-four beds. An hydraulic lift, provided by Robert Middleton, of Sheepscar Foundry, gives access to all the floors. The floors throughout are constructed with iron joists and concrete, upon which, in the wards, a solid oak block floor has been laid in pattern and polished by Mr. J. F. Ebner, of London; and in the corridors, stairs, baths, and water-closets there is a marble terazzo floor, laid by Messrs. J. and H. Patteson, of Manchester. On the ground floor the new building is connected to the old by a corridor, and on the first floor to the out-patient corridor by a bridge. The wards are heated by steam pipes, and also by open stoves, by Shorland, of Manchester, placed in the middle of the wards, with down draught flues. The out-patients' department consists of a waiting-hall, surrounded by the consulting, examination, operating-rooms, &c., of the various departments. The hall is 126 ft. long by 45 ft. wide, with two aisles, each 74 ft. by 12 ft., divided from the main area by arches and granite pillars. The roof is semi-circular, and the height from floor to ceiling is 42 ft. The hall is lighted by a series of clearstory windows on all sides, and at night by gas pendants and brackets. The floor is on a level with the first floor of the Infirmary, and the department is connected with the original building by an extension of the north and south corridors. The entrance is by a carriage porch, and an entrance-hall (23 ft. by 17 ft.), from the New-street, and a separate exit for patients are also provided. The Dispensary, which is 58 ft. by 15 ft., is at the west end of the hall, and has in connexion with it rooms for the dispenser. Two staircases are provided in recesses from the corridor, for access from lower stories. Baths for men and women are arranged below the surgical department, and on the south side, owing to the fall of the ground, two stories of rooms are obtained, the upper intended as bedrooms for domestics, the lower for stores. The pathological department is placed on the north side, and is connected by a corridor from the main north corridor. It contains a post-mortem-room, a mortuary, a laboratory, with retiring-room, and a waiting-room, for relatives. The isolation wards are placed upon the site on the north of the New-street, and are reached from the Infirmary by a tunnel under the street, from the basement floor level. These wards will consist of one story only, with stairs from the tunnel and a lift from that level to the ground floor. There will be two wards (15 ft. by 16 ft.), with kitchen, pantry, and store-room. The out-patients' department is to be heated by steam radiators, from the present boilers, and Messrs. Ashwell & Co., of Leicester and London, have the contract for this work. The principal contractors and sub-contractors are:—Messrs. Gould & Stevenson, for brick, stone, and wood; Watson & Worsnop, for slating; J. Lindley, for plumbing and glazing; A. & S. Wheater (Calverley), plasterers; Stephen Macfarlane, concreter; Bateman, painter; Leonard Cooper, steel and iron beams, joists, and roof ribs; Macdonald (Aberdeen), granite pillars; Verity Bros., gearing for windows; C. Smith & Son (Birmingham), locks and boundary railing; J. & H. Patteson (Manchester), "terazzo" floor; and J. F. Ebner (London), oak floors in wards. Mr. J. T. Brown is the clerk of works.

NEW CHURCH, BRIDGETON, LANARKSHIRE.—A new church has just been erected in Muslin-street, Bridgeton, on the site of the old church. The architect is Mr. John C. M'Kellar, I.A., Glasgow. The walls are of red stone. The church will be seated for 900 persons; and in the rear of the building, on the same level, there is a large hall for 350, a small hall for 100, a vestry, and a few other rooms. The estimated cost is 4,500*l*.

BATHS, ASTON, BIRMINGHAM.—At the public baths, now in course of erection, the first and second swimming-baths are roofed in and the baths are lined. The electricity for lighting both the baths and the public offices will be generated with the baths' pumping engine. A refuse-destructor is being erected, and will commence work in the course of six or eight weeks.

PROPOSED PUBLIC OFFICES, &C., BARKING, ESSEX.—On the 10th inst. a Local Government Board Inquiry was held by Major-General Phipps Carey, R.E., respecting the application by the Barking Town Local Board for a loan of 17,307*l*., for the erection of public offices, free library, fire-engine station, mortuary, stables and cart-sheds, and works of street improvements, as designed by Mr. C. J. Dawson, F.R.I.B.A., Surveyor to the Board. The buildings are proposed to be erected on two acres of land in East-street, sufficient space being reserved for future extension of public offices and the erection of public baths.

STAINED GLASS AND DECORATION.

MEMORIAL WINDOW, ST. MARK'S CHURCH, SHEFFIELD.—A new window has just been added to St. Mark's Church, Broomfield, Sheffield. Mr. W. F. Dixon, of London, the artist, has devoted the space to the subject of "The wise men and shepherds travelling from the East to the birthplace of the Saviour." The window contains six large lights with considerable tracery.

ST. JOHN'S CHURCH, BRADFORD.—A large rose window of Munich stained glass, representing Christ in twelve distinctive characters, such as the Good Shepherd, the Light of the World, &c., has recently been presented to St. John's Church, Bradford, by Mr. C. Briggs, in memory of his late parents. The window was designed and executed by Messrs. Mayer & Co.

MEMORIAL WINDOW, PARISH CHURCH, POWERSTOCK.—On the 12th inst., at the parish church, Powerstock, Dorset, a window in memory of the late Archdeacon Sanctuary was unveiled. The window is placed above the west door, and was supplied by Messrs. Hardman & Co., Birmingham, who also supplied the windows in the chancel. The representations are,—the central figure, Christ as the Good Shepherd, with a crown of thorns; on the right is St. John the Baptist; while on the left is St. Paul. A brass plate is to be placed underneath the window with an inscription.

PAINTED WINDOW, SOUTH DARLEY CHURCH, DERBYSHIRE.—The east window of South Darley Church has, says the *Manchester Courier*, just been filled with painted glass by Messrs. Morris & Co., of Merton Abbey, Surrey. The design and drawings were prepared by Mr. Burne Jones, A.R.A., while the colouring is the composition of Mr. William Morris. The window consists of three separate lights, the architecture of the church being an imitation of the Norman style. One of the side lights is filled with the figure of St. Mary. The other side light is occupied with the figure of St. John. The centre light is taken up with a representation of the Crucifixion.

MEMORIAL WINDOW, LANGTREE PARISH CHURCH, DEVON.—A three-light stained glass window has recently been dedicated to the memory of the late Archdeacon Barnes in Langtree Parish Church. In the centre light of the window is depicted Our Lord as the Good Shepherd under a canopy, of the Perpendicular period, of white and gold upon a quarry ground. In the two side lights are sacred monograms of I H S and X P C. The quarry treatment, as groundwork, is maintained in these two side lights also, as well as in the centre. The window is situated on the south side of the chancel. The work has been executed by Messrs. Ward & Hughes, of London.

WINDOW, ST. MARY'S CHURCH, WEST WORLINGTON.—On the 13th inst., a stained glass window, the gift of Mr. J. G. S. Troake, was unveiled in the Church of St. Mary, West Worlington, Devon. The window stands on the north side of the chancel immediately over the choir stalls, and consists of two lights, filled respectively with figures of King David and St. Mary the Virgin. The work was designed and executed by Messrs. Fouracre & Son, of Stonehouse.

FOREIGN AND COLONIAL.

PARIS.—On the 15th inst. the general annual meeting of the "Société Française des Habitations à Bon Marché" was held, under the presidency of M. Jules Simon. M. Siegfried read a history of the movement, and the Society's first prize, 1,500 francs and three silver medals, was awarded to MM. Teissier, Muller, and Guinard, of Marseilles; the second, 1,000 francs and a silver medal, to M. Chas. Robin, of Poissy; the third prize, 500 francs and a silver medal, to M. Léon David, of Havre.

BERLIN.—The election of new members of the Prussian Royal Academy, which took place last January, has been officially recognised by the Government. The number of vacancies to fill up was a large one, so that no less than twelve painters, three sculptors, two etchers, and an architect were nominated. The architect is Herr "Stadtbaudirector" Hugo Licht, the city architect of Leipsic. Among the painters we notice Mr. Walter W. Ouless, of London, two Spaniards, an Italian, and a Frenchman; of the three sculptors one is Professor Unger, of Vienna.——The municipal authorities have received a petition signed by the majority of junior artists resident in Berlin, requesting that a certain sum of money be annually voted for the purchase of works of art either for the decoration of municipal buildings, or for one of their city collections. The municipality has done little or nothing in the acquisition of works of art for several years. We hear that the petition was favourably received.——The number of *bonâ-fide* unemployed has increased this week. The Municipality is unfortunately not keeping its promise relating to the quick commencement of relief works. Several persons who could find work for over one thousand men, cannot do so on account of official delay in granting the so-called "building permission."——The municipal authorities have at last decided on the adoption of some suitable means of facilitating the reading of names of streets and house numbers at night. The regulation white lettering on blue enamel in use has given much satisfaction in daylight, but is difficult to distinguish after dark.——The railway tickets on the metropolitan railway are henceforward to be distributed by automatic machines. There will be no booking-offices at the stations, but change-offices instead.——The Imperial Bank (Reichsbank) has had to pay 4,750,000 marks (or over 235,000*l.*) for a site adjoining their present block, which is required for the new wing to be erected this year.——Herr Louis Schwartzkopf, an engineer of great repute, whose iron castings and machines are used all over the Continent, died on March 7, in his 66th year. He was a member of the Emperor's Special State Council and of the Academy of Public Works.

MUNICH.—The Bavarian Government has voted 5,000*l.* towards the acquisition of works of art for the Munich Pinakothek, and 2,000*l.* for the purchase of works of art for the decoration of Government property.

MISCELLANEOUS.

CLOCK-TOWER AND SANITARY CONVENIENCES NEAR VICTORIA STATION. — On Monday morning last the Vestry of St. George's, Hanover-square, threw open to public use some very admirably-arranged underground conveniences, situate below the "refuge" at the junction of Vauxhall Bridge-road with Victoria-street. The conveniences, which have been constructed by Messrs. Doulton & Co., of Lambeth, include five water-closets of the "Simplicitas" wash-out pedestal type; and thirteen urinals, semi-circular on plan, the backs being formed of enamelled fire-clay, and the divisions being of marble. The urinals are automatically flushed at intervals. The whole of the interior is well-lighted from the top by means of prismatic pavement lights, and there is a convenient recess for the attendant close to the entrance steps. This work has been carried out from the plans and under the direction of Mr. C. Livingstone, the Surveyor to the Vestry. The whole is surmounted by an iron clock-tower 25 ft. high, containing a clock by Messrs. Gillett & Co., of Croydon. The clock is illuminated at night.

SOCIETY FOR PRESERVING MEMORIALS OF THE DEAD.—At the second general meeting of this Society for the Session 1891-92, held in the rooms of the Royal Archæological Institute, 17, Oxford Mansion (Regent-circus), London, W., on Monday, February 15, a paper on "Dore Abbey, Herefordshire: an Outline of the Principal Facts and Features," by the Rev. Alfred Phillips, rector, was read by Mr. Arthur E. Griffiths, supplemented by some valuable and interesting remarks from Miss E. Bayley. A discussion on this comparatively unknown, half-ruined Cistercian abbey in the Golden Valley of Herefordshire took place, and in which the President, Messrs. C. E. Keyser, F.S.A., F. Chancellor, Herbert Jones, and the Rev. Prebendary Salmon joined. For the tenth annual meeting, the second or third week in June was suggested, and combined with it two days' excursion to some interesting churches, where great good may result from the Society's visit. Bishops Stortford was considered a suitable place for headquarters; one day to be given to Essex churches, and the second to Hertfordshire churches. At the next general meeting on Tuesday, April 5, a fully detailed plan will be submitted for approval.

PHŒNIX PHILANTHROPIC SOCIETY OF HOUSE PAINTERS.—The annual meeting of this, which, we are told, is the oldest benefit society in the trade, was held on the 12th inst. at the Society-house, 28, London-street, Fitzroy-square. First established in 1823 as a "Chapter of Communication," this Society has had an interesting history. According to a correspondent, it has paid over 20,000*l.* in sick and funeral benefits. Some years ago it nearly collapsed from the payment of a too liberal scale of benefits. For the usual weekly subscription, it endeavoured to assure to its members not only the customary sick benefits, but a superannuation pension more than double that proposed by Mr. Chamberlain's scheme. In ten years 2,500*l.* was paid by way of superannuation. A reconstruction of the rules placed the Society on a sounder financial basis, and the balance-sheet for the past year shows that for the sixth time consecutively a satisfactory increase has been made in the capital of the Society. The funds are entirely applied to the relief of sickness, and the assurance of a small sum on the death of a member. There is, however, a winter fund for the relief of members out of employment. None but duly-qualified painters can become members, and for many years it has numbered among its members most of the foremen and leading workmen of the first West-end firms.

NEW USE FOR WASTE SLATE.—M. Victor van Heyden, a Belgian engineer, has devised a method of treating waste slate-chippings as the constituent of an artificial material which he calls "ardoisine." The waste slate is, in the first place, reduced by the steam-hammer to fragments of a size suitable for being treated in the crushing-mill, which comminutes them into small nuts. These nuts, taken up by a bucket-chain, are disposed on a grinding-machine of very ingenious construction, which, in addition to its work of pulverising, acts simultaneously as a separator, the powder being placed on one side, while the chippings or scales are carried elsewhere. These are the two substances which, united with certain agglomerants, form the principal ingredients of "ardoisine." The powder and the chippings, in calculated proportions, are carried, by means of a channel furnished with an interior agitator or mixer, into a mill-hopper with a movable bottom, which constitutes the orifice of a kneader of special construction, which is heated by gas, in order to regulate more exactly the degree of heat. In this kneader are automatically cast in exact proportions the above-mentioned agglomerating substances, which, in their totality, constitute 9 per cent. of the product. When it leaves the kneader, it is run into a mould; a portable wagon receives it, and conveys it under a press of the power of 150 tons. It then forms a material capable of use for paving and other similar objects, or of high polish as slabs, and it is claimed that it resists a very high crushing pressure. Unfortunately, we are not told what are the "agglomerants" which form a large part of the material, and till we know that we cannot form much opinion as to its durability.

SITE FOR NEW PATENT OFFICE.—A portion of the property which the Government have taken for the Patent Office extension buildings consists of two houses in Took's-court, occupied by Mr. John C. Francis, in succession to his father, the late Mr. John Francis, for the printing and publishing departments of our contemporaries,—*Notes and Queries* and the *Athenæum*. For those papers new premises will shortly be ready, at the corner of Church-passage, Bream's-buildings, Chancery-lane, built by Mr. B. E. Nightingale, contractor, after the designs of, we are informed, Mr. W. C. Street, architect. They stand next westwards of the *Field*, *Queen*, and *Law Times* offices, designed by Messrs. Satchell & Edwards, architects, of which we gave a description on May 31, 1890. *Notes and Queries*, as established in 1849, was at first issued by Mr. George Bell, from No. 186, Fleet-street; in 1872 its ownership passed to the proprietor of the *Athenæum*, and the two journals were thenceforward issued from No. 20, Wellington-street, the *Athenæum* having been meanwhile removed from No. 5 Catherine-street. The two publishing departments were subsequently transferred to Took's-court, where the latter has been printed for more than sixty years past. Mr. Nightingale is building the first block of the Patent Office extension, next southwards of Staple Inn, after designs by Mr. Taylor, architect to the Office of Works. The block will be about 55 ft. high, with a front of Portland stone towards Took's-court, and is to contain one large room, rising through two stories, for the purposes of consultation and the adjustment of matters wherein counsel and patent-agents are employed on behalf of their clients' interests.

NEW SOUTH WALES.—According to the Sydney *Building and Engineering Journal* (February 6), satisfactory progress is being made with the work of judging the designs sent forward for the Rossiville Asylum, to be erected near Goulburn, New South Wales. There are thirty-nine competitors for this work, whose plans number 350 sheets of drawings. Mr. Vernon, the Government Architect, and Mr. Horbury Hunt, have inspected the site, and Dr. Manning and these gentlemen have paid a visit of inspection to the two principal asylums in that colony, for the purpose of ascertaining the nature of the best arrangements connected with these institutions. It is expected that several weeks hence Dr. Manning, Mr. Vernon, and Mr. Horbury Hunt, as an advice board, will forward a recommendation to the Minister for Works concerning the designs under examination, and all inquiries made. A few days ago, Mr. Lyne personally inspected the plans now on view in the Museum. In the opinion of the Minister, the competitive drawings are so excellent in quality as to be superior to any yet submitted for works connected with the public service.

REGISTRATION OF PLUMBERS: SHEFFIELD MEETING.—The annual meeting of the Sheffield Centre of the Association for the National Registration of Plumbers (connected with the Worshipful Company of Plumbers, London) was held on the 9th inst., at the Firth College. The chair was occupied by Mr. J. B. Mitchell-Withers, Vice-President of the Sheffield centre. The Chairman, in opening the proceedings, referred to work done in connexion with the Sheffield branch during the past year. He said the importance of such a society was being more thoroughly appreciated, and public bodies were beginning to see the importance of the necessity that none should be allowed to do drainage and other such plumbing work unless they were registered as thoroughly qualified men. The Chairman next distributed the certificates granted by the Worshipful Company of Plumbers to those plumbers who had qualified themselves for the same. Mr. Thompson, C.E., next gave an address on "Modern Sanitary Improvements." Professor Hicks proposed a vote of thanks to Mr. Thompson, and this was seconded by Professor Ripper, and carried with applause. A vote of thanks to the Chairman concluded the proceedings.

NEW ADDRESSES.—Messrs. W. & G. Shearburn, architects and surveyors, of Dorking, have opened a London office at Effingham House, Arundel-street, Strand.—Mr. T. E. Collcutt informs us that he is removing his offices from 5, Lancaster-place, Strand, to 36, Bloomsbury-square.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premium.	Designs to be delivered.
*Cemetery Chapel and Caretaker's Lodge..	Ripon Corporation ..	20*l.* & 5*l.*	April 4
*New County Council Buildings	Staffordshire C. C.	150*l.* 100*l.* & 50*l.*	May 27

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*25,000 yards Wood Pavement	Vestry of St. George's Hanover-square	*Official*	Mar. 21
*Supply of Materials	Mortlake Dist. Highway Bd.	do.	do.
Farmhouse, &c. Lochs, Urquhart, N.B.	.....	A. & W. Reid	Mar. 22
*General Paving Works	West Ham Council	Lewis Angell	do.
Repairs to School Buildings	Plymouth Sch. Bd.	*Official*	do.
Granite Road Metal	Irthlingboro High. Bd.	do.	do.
*Footbridges over Railway	Great Western Railway	do.	Mar. 23
*Girder Work for Bridges	do.	do	do.
Cottage, Elgin, N.B.	.....	A. & W. Reid	do.
Paving Setts, Kerbs, Road Metal, &c.	South Shields U.S.A.	Matthew Hall	do.
Lunatic Wards at Workhouse	Hunslet (Leeds) Union Guardians	R. J. Smith	do.
*Roadmaking and Paving Works	Hammersmith Vestry	H. Mair	do.
*Laying-down Wood Blocks	do.	do.	do.
Fever Hospital, Asylum, Wadsley, near Sheffield	West Riding C. C.	J. Vickers-Edwards	Mar. 24
New Buildings, Truro	Rosewin Training Sch.	W. Swift	do.
Outfall Sewer, &c.	Chester-le-StreetURSA	D. Baltour	do.
Stores and Cottage, Garforth	Leeds Indus. Co-op.Soc.	....	do.
Additions to Mansion House, Delnabo, Elgin, N.B.	.....	C. C. Doig	do.
Farmhouse, Garlickhill, Kinsteary, N.B.	.....	Ranald Macdonald	do.
Three Cottages, Cogenhoe, Northampton	.....	H. H. Dyer	Mar. 25
Sewerage Works (31,256 yards)	Pontypridd Loc. Bd.	Edwd. Rees	do.
Gasholder Tank	Normanton Gas Co.	*Official*	do.
Laying Water Pipes (10,440 yards), &c.	Nantwich U.R.S.A.	J. A. Davenport	do.
Road Metal	Durham County Coun.	Wm. Crozier	Mar. 26
Granite and Slag	King's Cliffe High. Bd.	*Official*	do.
Improvement of Robert-st. Ynysybwl	Mountain Ash L. B.	J. Williams	Mar. 28
Calvinistic Methodist Chapel, Taibach, Port Talbot, S. Wales	W. Griffith	.....	do.
Work at Burghead and Hopeman Station	Highland Ry. Co.	Alex. Shand	do.
Additions to School, East Barry, Glam.	Barry United Dist. Sch. Bd.	Seward & Thomas	do.
Additions and Alterations, East-end School, Elgin, N.B.	.....	A. & W. Reid	do.
*Purchase and Pulling-down Building Mat.	Sch. Bd. for London	*Official*	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor or Engineer.	Tenders to be delivered.
*Making-up and Paving Road	Lewisham Bd. of W.	*Official*	Mar. 30
*Making-up and Paving Road	Bromley Loc. Bd.	do.	do.
*New Sorting Office, Tothill Fields, S.W.	Com. of H. M. Works	do.	do.
*Post Office, Dover	H. M. Works	do.	Mar. 31
Timber	G. W. R. Co.	do.	do.
Square Bridge, 50ft. span, Dovecote, near Brampton, Cumberland	Brampton High. Bd.	do.	do.
Stores, Offices, and other Buildings, Albion-square, Pembroke Dock	Pembroke Dock Co-op. Soc.	H. C. Reid	do.
*Roadmaking and Paving Works	Fulham Vestry	W. Sykes	do.
Levelling, Paving, and Channelling Work	Gateshead Imp. Com.	J. Bower	Mar. 31
*Enlargement, &c. of Workhouse	Northwich Union	Mr. Joseph Cawley	do.
*Laying New Sewer	do.	*Official*	do.
*Reconstructing Roadway at Infirmary	Wandsworth & Clapham Union	T. W. Aldwinckle	do.
*Relief Station and Residence	do.	do.	do.
Board Sch. Work, Bedwas, Newport, Mon.	Bedwas Sch. Bd.	*Official*	April 6
*Sewerage Works	Oldbury Local Board	H. B. Nichol	April 8
*Supply of Cast-iron Pipes	Brighton T. C.	*Official*	April 9
*Alterations, &c. to Workshops, Leavesden Asylum	Met. Asylum Board	A. & C. Harston	April 12
Methodist Church, Gateshead, and other Work	.....	Davidson & Bendle	No date
Three Houses, Armley-road, Leeds	.....	Swale & Mitchell	do.
Alterations and Additions to St. Michael's Schools, Meanwood-road, Leeds	.....	Richd. Wood	do.
Additions and Alterations to Hotel, Gosforth, Newcastle-on-Tyne	.....	B. F. Simpson	do.
Re-building "Westoe" Tavern, South Shields	R. Henderson	Fred. Rennoldson	do.
Wesleyan Chapel and Schools, Consett, co. Durham	.....	Lamb, Armstrong, & Knowles	do.
Cottages, Upper Whiston, nr. Rotherham	.....	Fowler & Marshall	do.
*New Offices, Leicester	Prudential Assur. Co.	A. Waterhouse & Son	do.
*Rectory House, Great Carlton	.....	C. Kirk & Sons	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Assistant Street Inspector and Inspector of Nuisances	St. Giles B. of W.	109*l.* 4*s.* &c.	Mar. 23
*Surveyor and Inspector of Nuisances	Hanwell Loc. Bd.	150*l.*	Mar. 26
*Road Foreman	City of Birmingham	2*l.*	Mar. 30
*Clerk	St. Olave's Gram. Sch.	300*l.*	Mar. 31
*Clerk of Works and Collector	do.	100*l.* &c.	do.
*Draughtsman, Admiralty Outports	Civil Service Com.	.....	April 13
*Assistant Examiner in Patent Office	do.	.....	do.

Those marked with an Asterisk (*) are advertised in this Number. *Competitions*, p. iv. *Contracts*, pp. iv., vi., & viii. *Public Appointments*, p. xx. and xxi.

RAILWAY ACCIDENTS IN INDIA.—The statistics furnished by the Public Works Department of the railway accidents in India tend to show that if railway trains do not run with such speed in this country as they do in others, they are at least worked with more than average immunity from accident. The New York Central Railway Company claims recently to have eclipsed all the fast runs of the world, and asserts that it has run 436½ miles in 425¾ minutes, exclusive of stoppages. It will be many years, says a Bombay contemporary, before India can even hope to do this, but it may be assumed that the New York Central would be glad to show so clean a record per thousand miles and per thousand passengers in the way of casualties involving loss of life or personal injury. English railway managers, we imagine, will not willingly admit that they have been surpassed as regards speed, for the American train was an experimental one specially run; the record speeds in England have been made by every-day express trains in ordinary competition. But in England out of seven hundred officials one was killed and almost one in every hundred injured during the last year; 1,076 lives were lost and 4,721 injured; 118 of the killed and 1,361 injured being passengers. Of course, this is but a small total compared with the enormous number of passengers carried; but it is greater than is the case in India, and we doubt if any country can boast so few accidents. The returns are not so prepared as to make any minute comparison between the railways of the world possible. Indian returns are furnished half-yearly, and details are given which are not readily available on other lines. But a total of twenty-three killed and eighty-four wounded in accidents to trains over almost five millions of miles run is surely not a bad average. This is the return for the half-year ending June last. More than half the fatal accidents occurred to trespassers, or were due to want of caution or misconduct; of the injuries exactly half were due to want of caution by servants and others, 118 to carelessness on the part of passengers. —*Indian Engineer.*

BIRMINGHAM ENGINEER STUDENTS.—A meeting of the Birmingham Association of Students of the Institution of Civil Engineers was held on the 3rd inst. at the Midland Institute, the President, Mr. J. Edward Willcox, A.M.I.C.E., being in the chair. A paper was read by Mr. H. Shoosmith, A.M.I.C.E., on "Stability of Walls," which was followed by a discussion.

NEW BUSINESS PREMISES AT STRATFORD.—Messrs. Young & Marten, of Caledonian Works, Stratford, London, E., wholesale purveyors for the building trade, have recently made extensive alterations and additions to their already large establishment in the Broadway, Stratford. In it are the show-rooms for chimney-pieces, mantels, and over-mantels, tile-grates, stoves, and tile-hearths, &c., &c.

THE ENGLISH IRON TRADE.—Great irregularity prevails in the iron trade, owing to the miners' "play-period." Most of the large ironworks are suffering from the scarcity of fuel, and in many instances have ceased work altogether. Prices are rather firmer on account of the limited production; but business in both crude and manufactured iron is only of a hand-to-mouth character. The steel trade exhibits little alteration, but heavy rails are a trifle weaker. The tin-plate trade shows a slight improvement. Shipbuilding is quiet and the engineering branches are in an unsatisfactory condition. The coal trade is somewhat easier.—*Iron.*

MEETINGS.

SATURDAY, MARCH 19.

Architectural Association.—Visit to the Tower Bridge Works, by permission of Mr. J. Wolfe Barry. 3 p.m.

Glasgow Architectural Association.—Visit to Kilbirnie Church.

MONDAY, MARCH 21.

Royal Institute of British Architects.—Professor Aitchison, A.R.A., on "Byzantine Art." 8 p.m.

Society of Arts (Cantor Lectures).—Professor W. Robinson on "The Uses of Petroleum in Prime Movers."—IV. 8. p.m.

Victoria Institute.—8 p.m.

Liverpool Architectural Society.—Special meeting. Paper by Mr. H. Hartley.

TUESDAY, MARCH 22.

Institution of Civil Engineers.—Mr. A. R. Binnie on "Mean or Average Annual Rainfall, and the Fluctuations to which it is Subject." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Professor A. Wynter Blyth on "Sanitary Law, English, Scotch, and Irish; General Enactments; Public Health Act, 1875; Model Bye-Laws, &c." 8 p.m.

Photographic Society of Great Britain.—(1) Mr. Dallmeyer will show his Telephotographic lens. (2) Mr. Chapman Jones on "Copying Inclined Pictures." 8 p.m.

WEDNESDAY, MARCH 23.

Society of Arts.—Mr. Gilbert R. Redgrave on "Manufacture and Industrial Application of Flexible Tubing." 8 p.m.

THURSDAY, MARCH 24.

Society of Antiquaries.—8.30 p.m.

Edinburgh Architectural Association.—Mr. J. J. Burnet on "The Relative Position of the Architect and the Craftsman." 8 p.m.

FRIDAY, MARCH 25.

Institution of Civil Engineers (Students' Meeting).—Mr. G. Lambert Gibson on "The Seafield Dock and the Kirkcaldy and District Railway." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Professor A. Wynter Blyth on "Sanitary Laws and Regulations Governing the Metropolis." 8 p.m.

Institute of Certified Carpenters.—7.30 p.m.

SATURDAY, MARCH 26.

Edinburgh Architectural Association.—Visit to Roman Wall at Croy.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

2,819.—WINDOW-SASHES: *J. T. Nicholls.*—This patent relates to additions in the construction of the improved window-sash holder patented November 10, 1888.

5,501.—WHITE-LEAD: *W. Smith and W. Elmore.*—This invention consists of improvements in the production of white-lead from galena or from suitable residual products or substances containing sulphide of lead. The process is fully set out in the specification.

7,883.—FLUSHING CISTERNS: *J. Southall.*—This refers to an improvement in flushing cisterns. The inventor uses by preference a cistern having a well cast at a suitable position in its bottom. In this well is made an outlet pipe, terminating at its upper end in a valve-seat, the top standing somewhat above the bottom of the well. On this seat works a valve, which can be raised at will in the usual manner by means of a lever worked by a rod or chain outside the cistern, the lever being attached to a link connected loosely to the valve. This link works through a hole in a piece of metal bridging the top of the well, the lever of the ball-cock working up and down between its two sides for a certain distance, the sides being connected by two cross-pieces of metal, one at the top forming a jaw, and another lower down at such a point as to be under the ball-cock lever, so that when the link is raised it lifts the ball-cock lever up with it, closing the ball-cock, and when the valve is on its seat permitting the ball-cock lever to fall just low enough to allow a good flow of water to come in at the cock. The link has also a projecting part near the lower end forming a catch, which holds the valve up off its seat whilst the cistern empties as it slips over, and rests on the bridge piece, as described below, when the link is raised. On the bridge piece of metal near to one side of the hole in which the link works are two lugs, in which a lever is pivoted, the lever having a float at one end, the other end nearest the link having a slot in it, the slotted part working between the sides of the link, on which it operates by means of a pin passing through the slot. The pin is fastened at its end into the sides of the link. The action of the above arrangement is fully described in the specification.

12,760.—BRICK-PRESSING MACHINES: *J. S. Pullan and Others.*—This is an invention to provide an automatic stop motion on brick-pressing machines, by which, after the brick is pressed, and the plunger is raised to the top, the machine automatically stops for the removal and insertion of the bricks. It has also for its object the making the bricks of one uniform thickness outwardly. For this purpose a catch or projection is employed, preferably operated by, and connected with, the crosshead of the machine. This catch comes in contact with the handle of the clutch-lever, and automatically stops the machine at the top after the plunger is raised. A following-up spring returns the handle. The clutch consists of a pin passing through the clutch-boss, and having an angular projecting head in the groove of the boss of the clutch. A similar angular projection is formed on the clutch-lever.

NEW APPLICATIONS FOR LETTERS PATENT.

February 29.—3,896, W. Fox, Mitre-cutter or Trimmer.—3,905, J. Roots, Suspending, raising, or lowering Gasaliers, &c.—3,908, S. Jacobs, Fire-grate.—3,939, C. Luther, Wood Flooring.

March 1.—3,991, G. Nunn, Electrical-call and Indicating Apparatus.—4,037. T. Hawkesley, Dry-earth Closets.—4,048, J. Ottoway, Window-sashes and Frames.—4,049, J. Thomas and G. Kitchen, Work Bench.—4,052, P. Mancheron, Fire-grates.

March 2.—4,061, G. Williamson, Kitchen Ranges.—4,062, C. & C. Kite, Ventilators.—4,083, G. Leicht, Connecting or fastening together building stones or slabs for the formation of Walls.—4,131, J. Knowles, a Process for the treatment of raw materials to be used in the production of Portland Cement.—4,149, W. Charlesworth, Slurry Drying Structures used in the manufacture of Cement.—4,159, H. Anstie, Sash-fasteners.—4,162, W. Carr, Screw Nail.

March 3.—4,188, W. Waite, Window-sash Fastener.—4,213, H. Cheesman, Ladders.

March 4.—4,269, F. Fitton, A Safety Stair-step and Street Grate-tread, applicable to Lighting, Ventilation, &c.—4,274, F. Tolchard, Shuttles, used in connexion with the Seats of Water-closets for flushing purposes.—4,280, R. Hocking, Water-closets.—4,281, W. Shears, Tools employed in Working Wood, such as Planes, Spokeshaves, &c.—4,286, E. Fulcher, Machine for Moulding Slabs, Building, Ornamental, and other Blocks and Bricks.—4,295, J. Ardin and J. Brown, Construction of Blocks or Bricks for Street Pavements.—4,301, A. Illidge, Sash-fasteners.—4,332, C. Abernethy, Device for the Prevention of Draughts through Doors.

March 5.—4,373, T. Walford and J. Hodgkins, Caps or Terminals for Chimneys.—4,379, J. Shanks, Fittings for Baths, &c.—4,389, A. Emley and J. Symington, Bends for Water-pipes, &c.—4,405, S. Morrell, Sash-fasteners.—4,408, C. Dobbs, Scoria or Slag Blocks for Paving, &c. 4,424, M. Brophy, Door-locks or Latches.—4,426, M. Brophy, Door-knobs and Spindles.

PROVISIONAL SPECIFICATIONS ACCEPTED.

691, C. Cobham, Water-taps.—1,292, R. Browne, Fire-grates.—2,134, Water-closets.—2,322, S. Cooper, Hoists or Elevators.—2,566, W. Andrews, Door-springs—2,568, R. Kirlew, Chimney and Ventilating Shafts.—2,577, A. Milne, Double-action Bolts for Doors, French-windows, &c.—2,585, W. Mounsey, Flushing Apparatus for Water-closets, &c.—2,711, F. Humpherson, Automatic or Intermittent Syphon Flushing Apparatus.—2,716, E. Parr, Screws.—2,813, W. McKinley, Automatic Sash-fastening and Lock.—3,083, R. Walker, Machine for Grinding Portland Cement.—3,220, F. & J. Butterfield & Co., Limited, and W. Pearson, Mechanism for Operating Band Saws.—3,356, R. Bell, Heating Dwelling-houses, Hotels, and other Buildings.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

7,359, J. Merrill, Syphon Flushing Cisterns.—7,431, J. Cole, Window-fastenings.—7,432, E. Breething, Machinery for moulding Bricks.—10,137, H. Lake, Construction of Floors.—1,827, W. Brown, Jointing Concrete Paving.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

MARCH 7.—By *T. G. Wharton*: Three plots of freehold land, Hazel-rd., Kensal-green, 186*l.*; six plots of freehold land, St. Margaret's-rd., 360*l.*; twenty plots of freehold land, ditto, 1,152*l.*; 6 and 8, Princess-rd., Finsbury-pk., u.t. 71 yrs., g.r. 23*l.* 17s., r. 105*l.*, 845*l.*—By *C. Slee & Son*: 44, Sutherland-sq., Walworth, u.t. 20 yrs., g.r. 5*l.* 7s., 190*l.*; 17, Cross-st., Holborn, f. r. 90*l.*, 1,180*l.*; 127 and 129, High-st., Homerton, c., r. 27*l.* 6s., 240*l.*—By *Wagstaff & Warman*: 79, Gopsall-st., Hoxton, u.t. 44 yrs., g.r. 6*l.* 6s., r. 32*l.*, 225*l.*—By *Weatherall & Green*: 94, Walton-st., Chelsea, u.t. 50 yrs., g.r. 6*l.*, 630*l.*; 82 and 84, the Grove, Hammersmith, f., r. 115*l.*, 1,320*l.*; 98, Dalling-rd., u.t. 76 yrs., g.r. 6*l.* 10s., r. 40*l.*, 300*l.*; 12, 14, 16, 22 to 30 (even), Wharf-rd., Notting-hill, u.t. 74 yrs., g.r. 48*l.*, 660*l.*; i.g.r. of 100*l.*, Manchester-st., u.t. 74 yrs., g.r. 35*l.*, 850*l.*; 1, 11 to 17 (odd), Lockton-st., u.t. 74 yrs., g.r. 36*l.* 6s., 460*l.*; 4, 6, 12, and 14, Lockton-st., u.t. 74 yrs., g.r. 26*l.*, 270*l.*; 23 and 24, Manchester-st., u.t. 74 yrs., g.r. 12*l.* 12s., 160*l.*; 411, Latimer-rd., u.t. 33 yrs., g.r. 5*l.*, 130*l.*

MARCH 8.—By *Debenham, Tewson, & Co*: 51 to 59 (odd), White-st., Bethnal-green, f., r. 162*l.* 10s., 1,580*l.*; 26, Hersee-pl., f., r. 23*l.* 8s., 260*l.*; 7, Seven Star-alley, St. George's-in-East, f., r. 16*l.* 18s., 100*l.*; 12 to 15, Brunswick-pl., Commercial-rd., E., f., r. 62*l.* 8s., 405*l.*; 5, Mona-rd., Peckham, f., r. 22*l.* 2s., 305*l.*; "Neal's House," Woodhouse-rd., Leytonstone, f., r. 22*l.* 2s., 175*l.*; three plots of freehold land, Forest Hill, 160*l.*; a plot of freehold land, Hadleigh-rd., Southend, 60*l.*; 16 to 32 (even), Love-lane, Ratcliff, u.t. 68 yrs., g.r. 27*l.* 10s., r. 204*l.* 2s., 990*l.*; 40 to 48 (even), Love-lane, and 1, 2, and 3, Love Lane-sq., u.t. 6¾ yrs., g.r. 70*l.*, 100*l.*; 50 to 58 (even), Love-lane, u.t. 68 yrs., g.r. 60*l.*, r. 239*l.*, 860*l.*; 2 to 20 (even), Brook-st., u.t. 68 yrs., g.r. 40*l.*, r. 221*l.*, 740*l.*; 28 and 30, Brook-st., u.t. 8 yrs., g.r. 21*l.*, r. 54*l.* 12s., 15*l.*; 32, Brook-st., u.t. 68 yrs., g.r. 13*l.*, r. 39*l.*, 75*l.*; 4, Apsley-st., Stepney, u.t. 32 yrs., g.r. 1*l.*, 75*l.*; 63 and 65, Kender-st., Peckham, u.t. 59 yrs., g.r. 2*l.*, r. 53*l.* 6s., 415*l.*; 194 and 196, Edward-st., Deptford, u.t. 52 yrs., g.r. 4*l.* 2s., r. 52*l.*, 405*l.*; 54, Margery-pk.-rd., Stratford, u.t. 79 yrs., g.r. 5*l.*, r. 28*l.*, 240*l.*—By *C. W. Davies*: 25 and 26, New Charles-st., City-rd., u.t. 51 yrs., g.r. 9*l.*, 630*l.*; 29 and 81, Frome-st., Islington, u.t. 54 yrs., g.r. 8*l.*, 485*l.*; 27 and 28, Matilda-st., u.t. 53 yrs., g.r. 10*l.*, 565*l.*; 96, Southampton-st., King's-cross, u.t. 32 yrs., g.r. 5*l.* 5s., r. 38*l.*, 255*l.*; 19, Wyndford-rd., u.t. 15 yrs., g.r. 5*l.* 5s., r. 28*l.*, 125*l.*; 68 and 70, Cumming-st., Pentonville, u.t. 27 yrs., g.r. 9*l.* 5s., r. 43*l.* 10s., 235.—By *H. Oughton & Son*: 103 and 105, Walton-st., Chelsea, f., r. 60*l.*, 1,100*l.*; the residence called "Bancroft," Parson's-green, u.t. 89 yrs. g.r. 10*l.*, 610*l.*; 88, Shorrold's-road, Walham-green, u.t. 93 yrs., g.r. 5*l* 5s., r. 30*l.*, 260*l.*

MARCH 9.—By *Briant & Son*: 32, Hanover-rd., Plumstead, u.t. 41 yrs., g.r. 2*l.* 10s., r. 24*l.*, 290*l.*; 38, Hanover-rd., u.t. 38 yrs., g.r. 3*l.*, r. 24*l.*, 285*l.*; 261 and 263, Lynton-rd., Bermondsey, u.t. 51 yrs., g.r. 10*l.*, 500*l.*; 38 to 41, Kinross-st., u.t. 23 yrs., g.r. 12*l.*, 375*l.*—By *Walker & Runtz*: 27 and 28, Wyvil-rd., Lambeth, u.t. 54 yrs., g.r. 10*l.* 14s., r. 78*l.*, 660*l.*—By *Hobson, Richards, & Co.*: "Talbot Lodge," Muswell-hill, f., 620*l.*; 11 and 12, Peter's-lane, Smithfield, u.t. 91 yrs., g.r. 70*l.*, 215*l.*—By *Ellis Morris & Co.*: "The Surly Hall Hotel," near Windsor, f., 4,500*l.*; 15, Elgin-mews South, Maida-vale, u.t. 68 yrs., g.r. 6*l.*, r. 55*l.*, 310*l.*—By *Orgill, Swann, & Orgill*: F.g.r. of 80*l.*, with reversion in 39 yrs, Notting-hill, 1,930*l.*; an i.g.r. of 80*l.*, Alexandra-rd., St. John's-wood, u.t. 65 yrs., g.r. 20*l.*, 1,190*l.*; 61 and 62, Chester-mews, Regent's-pk., u.t. 26 yrs., g.r. 20*l.*, r. 45*l.*, 150*l.*; 51, Marine-st., and 30, Frederick-st., and "The Britannia" public-house, Bermondsey, u.t. 33 yrs., g.r. 6*l.*, r. 85*l.*, 1,010*l.*; "The Manor House Tavern," Finsbury-pk., u.t. 38 yrs., g.r. 15*l.*, r. 200*l.*, 3,010*l.*; "The Shovel Tavern," Cable-st., St. George's-in-East, f.g.r. 80*l.*, reversion in 7 yrs., 1,200*l.*; "The Rose and Crown," St. George's-st., Ratcliff, f.g.r. 40*l.*, reversion in 21 yrs., 600*l.*; "The Silver Tavern," Burdett-rd., Limehouse, f.g.r. of 75*l.*, reversion in 48 yrs., 1,570*l.*

MARCH 10.—By *Herring, Son, & Daw*: Two freehold houses and shops, Streatham Common, 1,100*l.*—By *Chesterton & Sons*: 1, Gliddon-st., Kensington, u.t. 84 yrs., g.r. 30*l.*, 1,820*l.*; 92, Gloucester-mews West, Hyde-pk., u.t. 50 yrs., g.r. 2*l.*, 210*l.*—By *E. Evans*: 90, Merton-rd., Wimbledon, f., r. 28*l.*, 330*l.*; 9 and 10, Spring-gardens, u.t. 88 yrs., g.r. 14*l.*, 290*l.*; 19, Lessar-av., Clapham, u.t. 92 yrs., g.r. 13*l.* 10s., r. 50*l.*, 390*l.*; No. 305, Wandsworth-rd., u.t. 15 yrs., g.r. 8*l.*, r. 42*l.*, 190*l.*; 13 and 29, Belle Vue-gardens, Earlsfield, u.t. 98 yrs., g.r. 10*l.*, 310*l.*—By *Stimson & Sons*: A plot of freehold land, Friern-rd., Dulwich, 150*l.*; 26 to 36 (even), Landell's-rd., u.t. 86 yrs., g.r. 27*l.*, 690*l.*; 10, Chesterton-rd., Notting Hill, u.t. 75 yrs., g.r. 8*l.*, r. 40*l.*, 390*l.*; 15, Nelson-sq., Peckham, u.t. 48 yrs., g.r. 10*l.*, 80*l.*; 19 and 22, Nelson-sq., u.t. 38 yrs., g.r. 12*l.* 12s., 250*l.*; The Residence, "Reefton," Tooting-pk.-rd., f., r. 25*l.*, 300*l.*; f.g.r. of 14*l.* 17s., with reversion in 91 yrs., 315*l.*; two c. cottages, Bricketwood Green, St. Albans, r. 10*l.* 14s., 150*l.*; 16, Solesbridge-lane, Chorley Wood, f., r. 5*l.* 8s., 200*l.*—By *C. C. & T. Moore*: 143, Rendlesham-rd., Clapton, f., r. 34*l.*, 450*l.*; 15, Bromley-st., Commercial-rd., E., u.t. 27 yrs., g.r. 3*l.*, r. 32*l.*, 265*l.*; 10, Portland-st., u.t. 27 yrs., g.r. 3*l.*, r. 32*l.*, 260*l.*; 44, West India Dock-rd., Shadwell, f., r. 24*l.*, 280*l.*; 23, George-st., Commercial-rd., f., 230*l.*; 25 to 31 (odd), Love-lane, Shadwell, u.t. 19 yrs., g.r. 12*l.* 10s., 340*l.*; 22 to 26, King David-lane, u.t. 12 yrs., g.r. 22*l.*, 255*l.*; stabling and store, Pope's Hill, u.t. 8 yrs., no g.r., r. 30*l.*, 65*l.*; 70 to 73, Bridge-rd., Stratford, u.t. 78 yrs., g.r. 10*l.*, 475*l.*; 123, Ball's Pond-rd., Islington, u.t. 12 yrs., g.r. 6*l.*, r. 38*l.*, 116*l.*; 16 and 17, Tysoe-st., Clerkenwell, u.t. 23 yrs., g.r. 8*l.*, r. 120*l.*, 940*l.*; 114, 116, and 118, Copenhagen-st., Islington, u.t. 53 yrs., g.r. 36*l.*, 680*l.*—By *Newbon & Co.*: 1 to 7, Nelson-sq., Islington, u.t. 39 yrs., g.r. 50*l.*, 765*l.*; 93 to 105 (odd), Tower Hamlets-rd., Forest Gate, u.t. 84 yrs., g.r. 14*l.*, 620*l.*; 42 and 44, Hargrave-pk., Holloway, u.t. 60 yrs., g.r. 21*l.*, r. 124*l.* 10s., 880*l.*

MARCH 11.—By *Baker & Sons*: 1 and 3, Clifton-ter.; and 1 to 6, Meadow Cottages, Clayton, Sussex, f., r. 72*l.* 19s.,—ex mortgage, 250*l.*—By *Wood & Kirby*: 9 and 10, Jerusalem-passage, Clerkenwell, f., r. 85*l.*, 1,020*l.*; 53 and 55, Outram-st., Caledonian-rd., u.t. 66 yrs., g.r. 12*l.*, 705*l.*—By *E. Christian*: 2, Cayley-st., Stepney, u.t. 17 yrs., g.r. 2*l.* 2s., 85*l.*: 104, Whitehorse-st., u.t. 17 yrs., g.r. 5*l.* 5s., 80*l.*; 108, Whitehorse-st., u.t. 17 yrs., g.r. 7*l.* 7s., 150*l.*

[*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.			**TIMBER (*continued*).**		
Greenheart, B.G.	ton	9/0/0	0/0/0	Satin, Porto Rico	0/0/8	0/1/6
Teak, E.I.	load	10/10/0	15/0/0	Walnut, Italian	0/0/3½	0/0/7
Sequoia, U.S.ft.cu.		2/3	3/0			
Ash, Canada	load	2/10/0	4/0/0	**METALS.**		
Birch, do.		3/5/0	4/10/0	Iron—Pig, in Scotland	ton	2/0/4	2/0/7
Elm, do.		3/10/0	4/15/0	Bar, Welsh, in London		6/0/0	6/10/0
Fir, Dantsic, &c.		2/0/0	3/10/0	Do. do. at works in Wales		5/10/0	6/0/0
Oak, do.		3/0/0	5/5/0	Do. Staffordshire, in London		6/5/0	6/15/0
Canada		5/10/0	7/0/0	Copper—British, cake and ingot		49/0/0	49/10/0
Pine, Canada red		2/10/0	3/10/0	Best selected		50/0/0	51/0/0
Do, yellow		2/10/0	5/0/0	Sheets, strong		60/0/0	0/0/0
Lath, D'ntsic, fath		5/0/0	6/0/0	Chili, bars		46/5/0	46/12/6
St. Petersburg		5 0/0	7/0/0	Yellow Metal	lb.	0/0/5	0/0/5⅝
Deals, Finland, 2nd & 1st std	100	8/10/0	10/10/0	Lead—Pig, Spanish	ton	10/17/6	11/0/0
Do, 4th & 3rd		7/10/0	8/10/0	English, com. brands		11/2/6	11/5/0
Do, Riga		6/10/0	8/0/0	Sheet, English, 3 lbs. per sq. ft. and upwards		13/0/0	0/0/0
St. Petersburg, 1st yellow		11/0/0	15/0/0	Pipe		13/10/0	0/0/0
Do. 2nd yellow		8/10/0	10/0/0	Zinc—English sheet	ton	25/5/0	0/0/0
Do. white		7/10/0	10/10/0	Vieille Montagne		25/15/0	0/0/0
Swedish		7/15/0	16/0/0	Tin—Straits		89/5/0	89/15/0
White Sea		8/10/0	18/0/0	Australian		89/7/6	89/15/0
Canada, Pine 1st		20/0/0	26/0/0	English Ingots		92/10/0	92/15/0
Do. do. 2nd		14/10/0	16/0/0				
Do. do. 3rd, &c.		8/0/0	10/5/0	**OILS.**			
Do. Spruce, 1st		8/10/0	11/0/0	Linseed	ton	18/12/6	19/0/0
Do. do. 3rd & 2nd		6/15/0	8/0/0	Cocoanut, Cochin		25/0/0	25/10/0
New Brunswick		7/0/0	7/10/0	Do. Ceylon		22/5/0	0/0/0
Battens, all kinds		3/10/0	15/10/0	Palm, Lagos		23/0/0	23/10/0
Flooring Boards, sq., 1 in. prep. 1st		0/8/6	0/14/6	Rapeseed, English pale		25/10/0	26/0/0
Do. 2nd		0/7/6	0/11/6	Do. brown		24/0/0	0/0/0
Other qualities		0/4/6	0/8/0	Cottonseed ref.		18/15/0	0/0/0
Cedar, Cuba	ft.	/3½	/4½	Oleine		21/10/0	22/10/0
Honduras, &c.		/2½	/4	Lubricating, U.S.		4/10/0	5/10/0
Mahogany, Cuba.		/4½	/6½	Do. refined		5/0/0	10/0/0
St. Domingo, cargo av		/4½	2/0	Tar—Stockholm	barrel	0/19/0	1/0/0
Mexican do. do		/4	/5	Archangel		0/12/6	0/0/0
Tobasco do. do		/5½	/7				
Honduras do.		/5½	/6½				
Box, Turkey	ton	4/0/0	15/0/0				
Rose, Rio		10/0/0	20/0/0				
Bahia		9/0/0	18/0/0				
Satin, St. Domingo	ft.	0/0 8	0/1/3				

TENDERS.

[Communications for Insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Thursdays.*]

ABERTILLERY (Mon.).—For re-building the "Globe" Hotel, and adjoining shop, for Mrs. Edwards. Mr. Alfred Swash, architect, 3, Friars-chambers, Newport, Mon. Quantities by the architect:—

Thomas Webb	£1,447	Dyson Parfitt	£1,285
R. Williams & Son	1,419	Thos. Foster	1,240
Wm. Price	1,400	A. P. Williams, Abertillery*	1,200
W. Jones & Son	1,397	John Jenkins	1,065

* Accepted.

ASTON MANOR (Birmingham).—For the complete electric installation of the baths and public offices, for the Local Board. Mr. W. Augustus Davies, Engineer to the Board:—

Verity & Sons	£1,661 7 6
Fowler, Lancaster, & Co.	1,594 0 0

ASTON MANOR (Birmingham).—For the erection of two cabmen's shelters, at Aston, from designs by Mr. W. Augustus Davies, Surveyor to the Board:—

S. Cardall & Son	£275	F. N. Stephens	£142
J. Simons	165	J. E. Moorhouse, Birmingham (accepted)	138
Clarke & Co.	150		

ASTON MANOR (Birmingham).—Accepted at schedule of prices, for widening, deepening, and improving the Hockley Brook Course, for the Aston Manor Local Board and the Birmingham City Council. Mr. W. Augustus Davies, Engineer:—

Currall & Lewis, Birmingham.

ASTON MANOR (Birmingham).—For the construction of a new road, Aston Manor. Mr. W. Augustus Davies, Surveyor to the Board:—

Jones & Fitzmaurice	£446	J. Biggs, Birmingham*	£385
Currall & Lewis	409		

* Accepted.

BARNET (Herts).—For the erection of two shops, High-street, Barnet, for Mr. C. Mees. Mr. A. E. Smith, architect, Luton:—

Pearson	£1,456	Curaon	£1,280
Ashton	1,429	J. Baughen, Barnet*	1,250
Bateley	1,397		

* Accepted.

BOUNDS-GREEN, N.—For additions and decoration to Magdala House, Brownlow-road, for Mr. George Wagner. Mr. Chas. W. Latter, architect, Oak-lane, Bounds-green, N. Quantities by the architect:—

F. Voller	£397 10 0
S. Yardley & Son, Wood-green (accepted)	393 15 0

BRISTOL.—For erecting St. Phillip's Branch Bank, West-street, Bristol, for the Bristol and West of England Banking Company. Mr. Henry Williams, architect, 28, Clare-street, Bristol. Quantities by Mr. A. Barratt, Somerset-chambers, Corn-street, Bristol:—

E. T. Hatherley	£3,873	Cowlin & Son	£3,473
Eastabrook & Son	3,800	E. & G. Howell	3,415
E. James	3,799	C. A. Hayes	3,399
Jas. Wilkins	3,760	G. Humphreys	3,379
Wm. Veals	3,725	E. Love	3,350
E. Waiters	3,700	H. E. Forse	3,300
S. E. Davies	3,642	G. H. Wilkins	3,280
Stephens, Bastow, & Co.	3,549	R. Wilkins & Son	3,274
Wm. Church	3,547	[All of Bristol.]	

None accepted. Estimate to be revised.

CARDIFF.—For the supply of 323 cast-iron columns for new biscuit factory and warehouses, Cardiff, for Messrs. Spillers & Bakers, Limited. Messrs. Veall & Sant, architects, Cardiff. (Twenty-two different patterns):—

	Totals.		Per Ton.	
	Cast Horizontal.	Cast Vertical.	Horizontal.	Vertical.
T. Spittle, Limited	£1,164 2 0	—	£7 0 0	—
J. Allan, sen., & Sons	1,100 0 0	—	6 15 0	—
E. Wood	1,057 4 0	£1,216 0 0	6 10 0	£7 10 0
A. Handyside & Co., Limited	—	1,215 0 0	—	7 12 6
Laidlaw & Son	—	1,162 0 0	—	7 10 0
C. Jordan & Sons	996 0 0	—	6 0 0	—
J. Williams & Sons, Cardiff	*957 6 9	1,079 6 9	5 18 0	6 13 0

* Accepted.

CARDIFF.—For pitching, paving, and channelling streets, for the Corporation. Mr. W. Harpur, C.E., Borough Engineer, Town-hall, Cardiff. Quantities by the Borough Engineer:—

J. Allan	£3,881 18 6	Ellis & Davies	£3,080 8 6
R. Smith	3,826 17 6	T. Williams	3,030 3 11
J. C. Pearson	3,738 14 9	J. Rich (accepted)	2,950 5 2
T. Harries	3,443 0 1	[All of Cardiff.]	

CARLISLE.—Accepted for the erection of a one-arch oblique bridge, Blackpool-gate, Bewcastle. Mr. Richard Maxwell, surveyor, Longtown, Cumberland:—

George Kyle, Newcastleton, N.B.	£728 10 0

CHACEWATER (Cornwall).—For rebuilding the parish church, for the Building Committee. Mr. E. Sedding, architect, 7, Buckland-terrace, Plymouth:—

John Borlase	£1,467	W. Moyle, Chacewater*	£1,425
Farr Bros.	1,450		

* Accepted for first contract.

CHERTSEY.—Accepted for levelling, metalling, channelling, &c., Mills-road and North-road, Hersham, for the Rural Sanitary Authority. Mr. W. Durrant, surveyor:—

G. A. Franks, Guildford	£135 8 0

DORCHESTER.—For additions to the brewery at Dorchester, for Messrs. Eldridge, Pope, & Co. Messrs. Crickmay & Sons, architects, No. 17, Parliament-street, Westminster. Quantities by Messrs. H. Raven & Harry W. Crickmay, 12, Dartmouth-street, Westminster:—

Builders' Work.

R. Davis & Son	£2,198 10 0	A. H. Green*	£1,912 0 0
J. Guy & Son	1,961 0 0		
J. T. Whettam	1,940 0 0		

* Accepted.

Iron Work.

A. H. Green	£1,380 0 0	W. H. Lindsay, Neal, & Co.	£1,130 0 0
S. Griffith	1,365 9 0	Foster, Lott, & Co.*	1,053 13 6
Matthew T. Shaw & Co.	1,192 0 0	J. T. Whettam	995 0 0
Thornewill & Warham	1,180 0 0		

* Accepted.

Builders' Work and Iron Work.

W. Gibson	£3,788 0 0
J. A. Bartlett	3,527 14 0

FARNHAM.—For alterations at Seaforth Heath End Hall, Farnham, for Major R. Dixon. Mr. A. J. Sturges, architect and surveyor, Guildford:—

Stanley Ellis	£850	Diamond & Sons	£754
T. H. Kingerlee	845	Patrick, Farnham*	725
P. C. May	829		

* Accepted.

GUILDFORD.—For alterations, Guildown Cottage, Guildford, for Mr. J. W. Bentley. Mr. A. J. Sturges, architect and surveyor, Guildford:—

May	£506	Stanley Ellis, Guildford*	£467
Higlett & Hammond	484		

* Accepted.

HARROGATE.—Accepted for the erection of new buildings, for the Harlow Manor Hydropathic Co., Limited. Mr. Henry A. Cheers, architect, Twickenham:—

Gould & Stevenson, Leeds	£11,500 0 0

[Full list of tenders too long for publication.]

HEXHAM.—For the erection of a convalescent home. Messrs. Johnson & Crawford Hick, architects, Arcade, Newcastle-on-Tyne:—

Martinson & Wilton	£3,283 11 8	E. Snowball	£2,743 4 0
Middlemiss Bros.	3,000 0 0	W. & J. Darlington	2,721 10 0
Hutchinson	2,800 17 4	H. Brown & Co.	2,651 14 6
Rutherford & Armstrong	2,798 0 0	C. Hope	2,587 0 0
G. Gradon & Son	2,793 14 0	J. Herdman & Son, Hexham*	2,466 4 2
J. Ewell	2,759 11 2		
E. Darlington	2,747 3 9		

* Accepted.

HORNSEY.—For new roads, sewers, surface-water drains, &c., for the British Land Company, Limited, on their estate at Harringay-park, Middlesex. Mr. Henry B. Michell, surveyor:—

Neave & Son	£8,137	Rogers & Co.	£6,610
Killingback & Co.	8,035	Peill & Son	6,520
Bloomfield	7,808	Wilson	6,234
Pizzey	7,519	Jackson, Leyton*	5,678
Dunmore	7,318		

* Accepted.

LANGFIELD.—Accepted for the erection of a fever hospital, for Mr. John Ashston Fielden. Mr. J. Sutcliffe, architect, 6, Roomfield-buildings, Todmorden, Lancashire. Quantities by the architect:—

Mason and Bricklayer—Thos. Mitchell, Warley, Halifax	£5,739 10 2
Carpenter and Joiner—James Haigh, Hebden Bridge	
Plumbers' and Glaziers' work—Jonas Alderson & Sons, Luddenden Foot	
Slaters and Plasterers—Thos. Wrigley & Son, Hebden Bridge	
Blacksmith—John Horsfield, Luddenden Foot	
Concrete—Geo. Greenwood & Sons, Halifax	
Ventilators—Hill & Hey, Halifax	

LIVERPOOL.—Accepted for erecting Public Offices for the Huyton-cum-Roby Local Board, near Liverpool. Mr. Henry A. Cheers, architect, Twickenham:—

C. Burt	£2,374 0 0

LONDON.—For the erection of shop addition to Norfolk Villa, 186, Larkhall-lane, Clapham, for Miss Mannering. Mr. Richard Price, surveyor, 25, Park-road :—

Dent	£145 10	Ford (accepted)	£128 0

LONDON.—For gas-fitting work and lamps at the "Abbey" Tavern, Kentish Town-road, for Mr. A. T. Cowling. Mr. John T. Alexander, architect, 40, Great James-street, Bedford-row :—

Vaughan & Brown	£300 0	Morris	£231 10
Steadman	262 0	Biggs, Boro'-road, S.E.	218 0

LONDON.—For re-building warehouse, No. 10, Osborn-street, Whitechapel, for the Victoria Wine Co. Mr. George Waymouth, architect, 23, Moorgate-street, E.C. Quantities supplied by Mr. Alan Paull, 6, Quality-court, Chancery-lane :—

F. & F. J. Wood	£6,510	W. Morter	£5,839
Perry & Co.	5,960	Richardson Bros.	5,638
W. Gladding	5,860	J. Sparks (accepted)	5,275

LONDON.—For the erection of new warehouse in Bream's-buildings, Fetter-lane, E.C., for Messrs. Sampson Low, Marston, & Co., Limited. Mr. W. Seckham Witherington, architect, 79, Mark-lane, E.C. :—

Foster & Dicksee	£8,333	O. Cromwell	£7,365
W. H. Lascelles	7,860	B. Nightingale	7,187
J. Grover & Son	7,635	W. Shurmur	6,993
W. G. Larke & Son	7,565	H. King & Sons	6,482
C. F. Kearley	7,546		

LONDON.—For alterations and additions to the "Black Lion" public-house, High-street, East Ham, E., for Mrs. C. Keep. Mr. Fred A. Ashton, architect, 3, Crooked-lane, E.C. :—

W. Shurmur	£2,943	W. Watson	£2,390
Hearle & Farrow	2,695	Coulsell Bros.	2,383
Walker Bros.	2,677	F. Voller (accepted)	2,379

LONDON.—For three steel Cornish boilers, for ink factory, Finsbury-park, N., for Mr H. C. Stephens, M.P. Messrs. Crickmay & Sons, architects, 17, Parliament-street, Westminster :—

J. Foster & Sons	£1,000	Fraser & Fraser	£942
Oldham Boiler Works Co.	1,000	E. Heaton & Son, Manchester*	846

* Accepted.

LUTON.—For the erection of warehouses, Bute-street, Luton. Mr. A. E. Smith, architect, Luton :—

Wright	£1,978	Neville	£1,760
Saunders	1,944	Parkins	1,639
Smart	1,780	Pryer (accepted)	1,597

[All of Luton.]

LUTON.—For the erection of saw-mill, Bedford-road, Luton, for Messrs. Arnold & Co. Mr. A. E. Smith, architect, Luton :—

Kingham	£813 0	Pryer	£734 0
Neville	775 0	Saunders	713 0
Long	774 10	Parkins*	627 10
Smart	729 0		

* Accepted.

[All of Luton.]

MORPETH.—For the erection of a doctor's-house, for the Ashington Medical Society. Mr. W. J. Charlton, engineer, Ashington Colliery, Morpeth :—

Waterson	£550	Douglass Bros., Blyth*	£520

* Accepted.

NEWCASTLE-UNDER-LYME.—For the execution of certain drainage works, for the Town Council. Mr. Jas. Pattison, Borough Surveyor, Newcastle-under-Lyme :—

J. Horabin	£1,612 10	Smith & Taylor	£1,373 10
F. Barke	1,552 13	[Surveyor's estimate, £1,370.]	

PLYMOUTH.—For building new parish room and school, All Saint's, Plymouth. Mr. Edmund Sedding, architect, Plymouth :—

John Finch	£1,330 0 0
P. Blowey, Plymouth (accepted)	1,150 0 0

SEVERN TUNNEL JUNCTION (Mon.).—For the erection of ten cottages at Severn Tunnel Junction, for Messrs Parnall. Mr. Alfred Swash, architect, 3, Friars-chambers, Newport, Mon. Quantities by architect :—

Morgan & Roberts	£2,690	Jno. Linton	£2,550
Wm. Price	2,685	Executors of W. Gradwell	2,330
Thos. Webb	2,680	Geo. Wilkins	2,327

TOOTING.—For the erection of chapels, lodges, and boundary walls, for the Streatham Burial Board. Mr. W. Newton Dunn, A.R.I.B.A., architect, 1 and 2, Bucklersbury, E.C. Quantities by Messrs. Evans & Deacon :—

	Chapels.			Lodges.			Boundary Wall.			Totals.		
	£.	s.	d.	£.	s.	d.	£.	s.	d.	£	s.	d.
Hill Bros.	4,787	0	0	2,471	0	0	3,629	0	0	10,887	0	0
Carmichael	4,920	0	0	2,420	0	0	3,450	0	0	10,790	0	0
Candler & Sons	4,750	0	0	2,550	0	0	3,400	0	0	10,700	0	0
Higgs & Hill	4,644	0	0	2,500	0	0	3,540	0	0	10,684	0	0
Dove Bros.	4,875	0	0	2,375	0	0	3,425	0	0	10,675	0	0
Peacock Bros.	4,268	0	0	2,194	18	11	3,246	18	10	9 709	18	1
Smith & Sons	4,297	0	0	2,160	0	0	3,137	0	0	9,594	0	0
A. M. Deacon	4,195	6	10	2,090	6	10	3,141	6	4	9,427	0	0
F. & H. Higgs	4,288	0	0	2,264	0	0	2,813	0	0	9,365	0	0
Lorden & Sons	4,083	0	0	2,172	0	0	2,694	0	0	8,949	0	0

Drainage and Roads.

C. T. Newman	£3,542 10	Neave & Son	£2,085 0
Pelll & Sons	2,398 0		

Wrought-iron Railing and Gates.

Baylis, Jones, & Baylis	£319	7	6	Main & Co.	£208	0 0
E. L. Cooper	275	0	0	Hill & Smith	183	0 0
Stevens Bros.	270	0	0	Letheram (Cheltenham)	152	5 10

SHEFFIELD.—For the erection of a school, Derbyshire-lane, Norton, for the Norton School Board. Mr. T. H. Wilson, architect, 63, Norfolk-street, Sheffield :—

	School.			Walls.		
Thos. Lowe & Sons	£1,725	0	0	£400	0	0
Thos. Astling	1,666	0	0	368	0	0
Jno. Morton	1,617	0	0	368	0	0
J. H. Hurst	1,579	0	0	311	0	0
J. Bee & Sons	1,502	10	0	328	0	0
Abraham Gibson	—			259	0	0
Thos. Roper	1,647	0	0	—		
Cecil Skelton	1,520	0	0	—		
Hy. Harrison, Greenhill, Derbyshire*	1,465	8	0	263	3	4

* Accepted.

N.B.—Separate tender required for boundary walls.

WALTHAMSTOW.—For alterations at the "Lorne Arms" public-house, Queen's-road, Walthamstow, E., for Mr. C. A. Nicoll. Mr. Fred. A. Ashton, architect, 3, Crooked-lane, E.C. :—

W. Shurmur	£396	Hearle & Farrow	£298
Coulsell Bros.	323	F. Voller (accepted)	284
W. Watson	312	F. Linzell	265

WATERHOUSES (co. Durham).—For alterations and additions to property for Mr. Jonathan Hall. Mr. H. T. Gradon, architect, Durham :—

Wm. Ayton & Sons	£403 18 0	James White	£340 0 0
Thos. Walton	395 16 0	M. R. Draper & Sons, West Rainton*	328 1 10
James D. Carr	380 0 0		
James Robson	380 0 0		

* Accepted.

WEST BROMWICH.—For the construction of a brick gas-holder tank, 124 ft. diameter, at Albion, for the Town Council :—

Jno. Aird & Sons, London. (Accepted on a schedule of prices.)

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J. P. M. W.—T. L. W.—W. L.—T. S. (shall have attention).—V. & S. (we cannot conveniently insert the information in the tenders column).—E. G. W.—W. A. D.—"A Non-Gambler" (we have not space for your letter).—H. J. N. (ineligible, amount not being sent).

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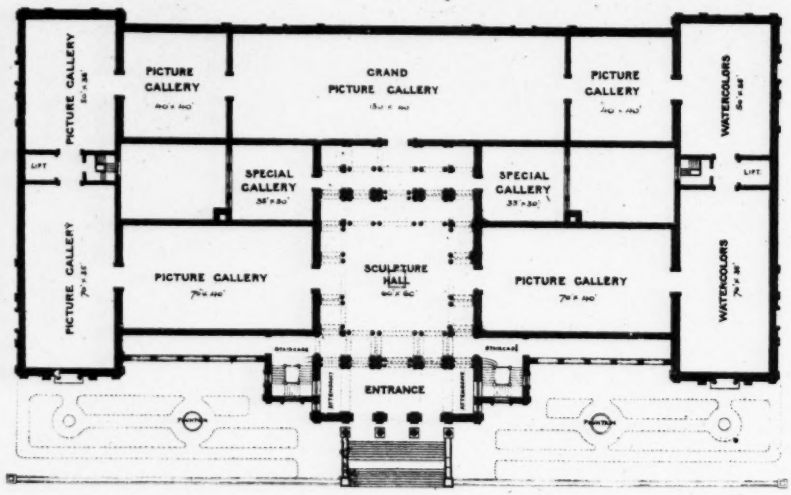
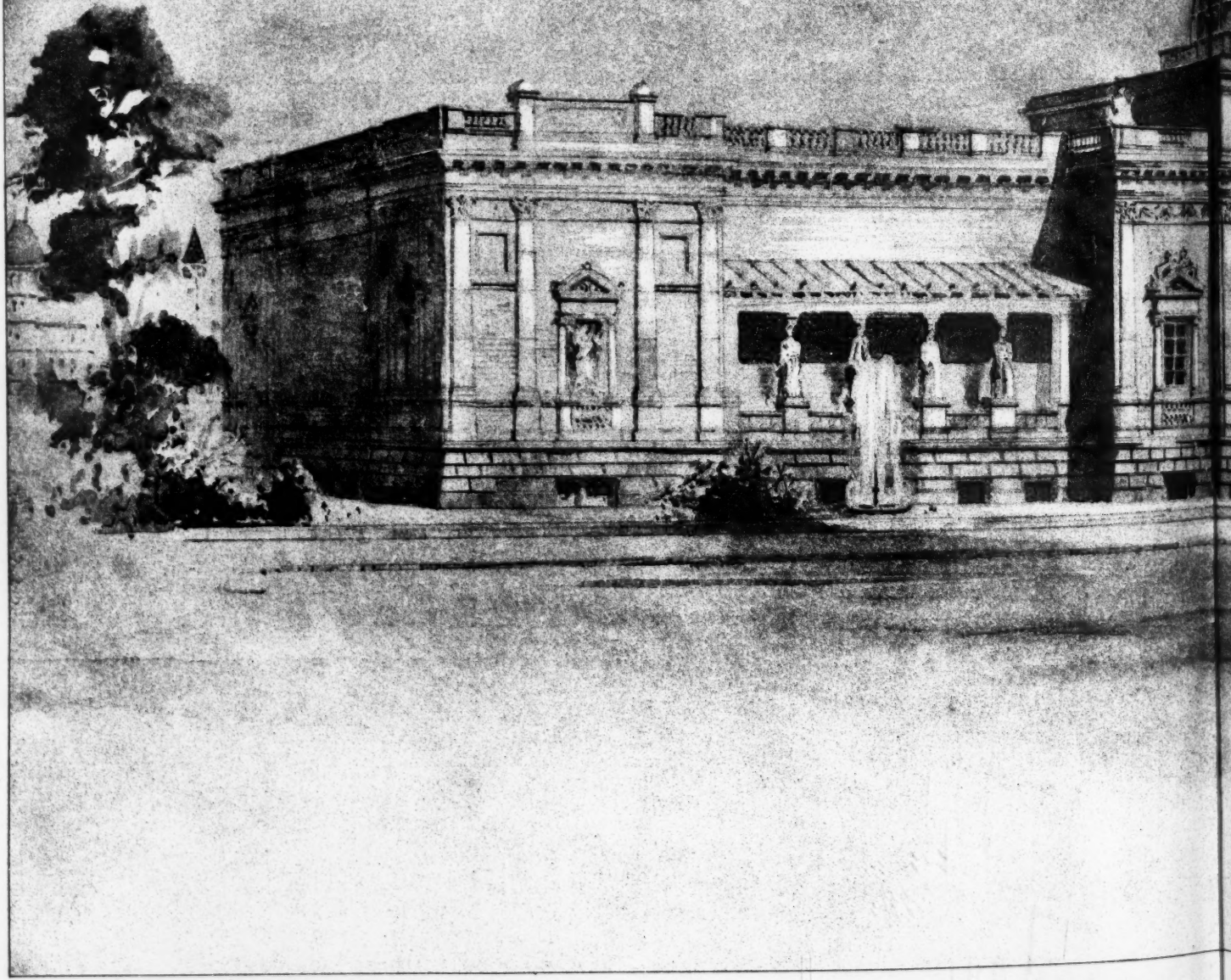


GROUND FLOOR PLAN

SCALE OF FEET



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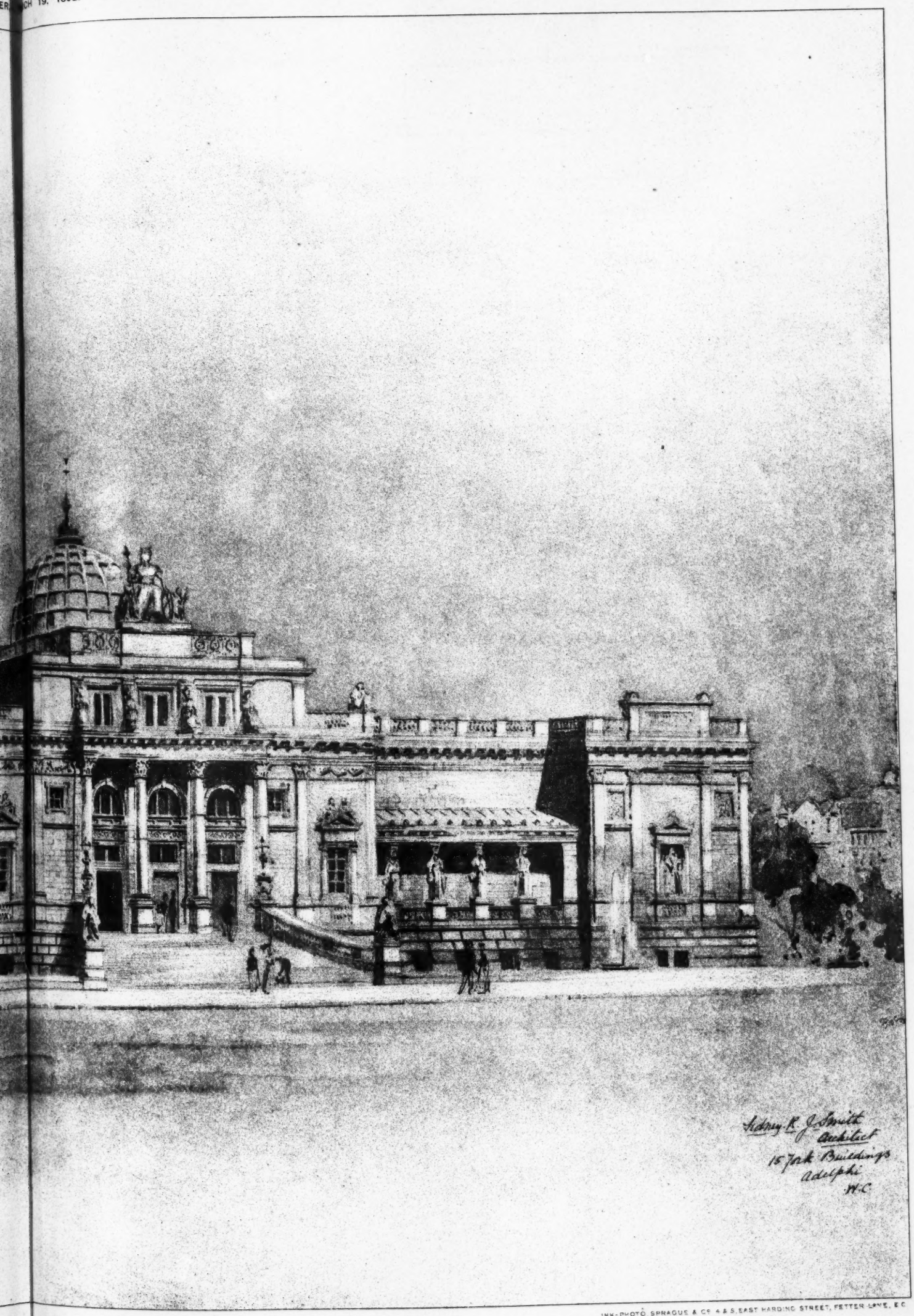

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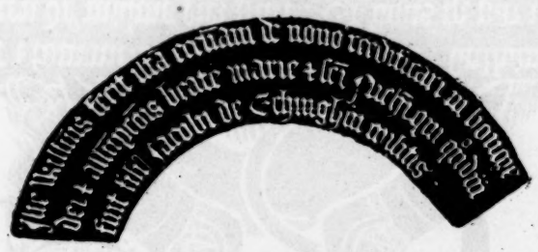
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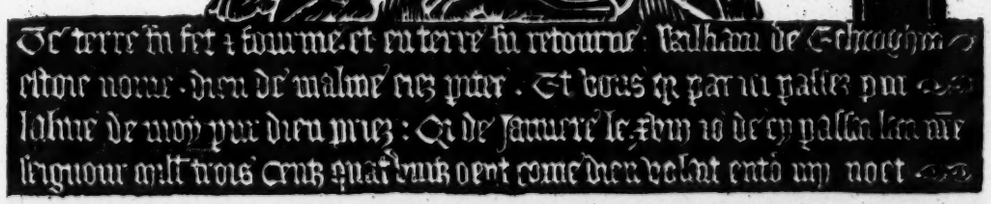
De terre fu fet & fourme et en terre fu retourne · Walham de Echingham
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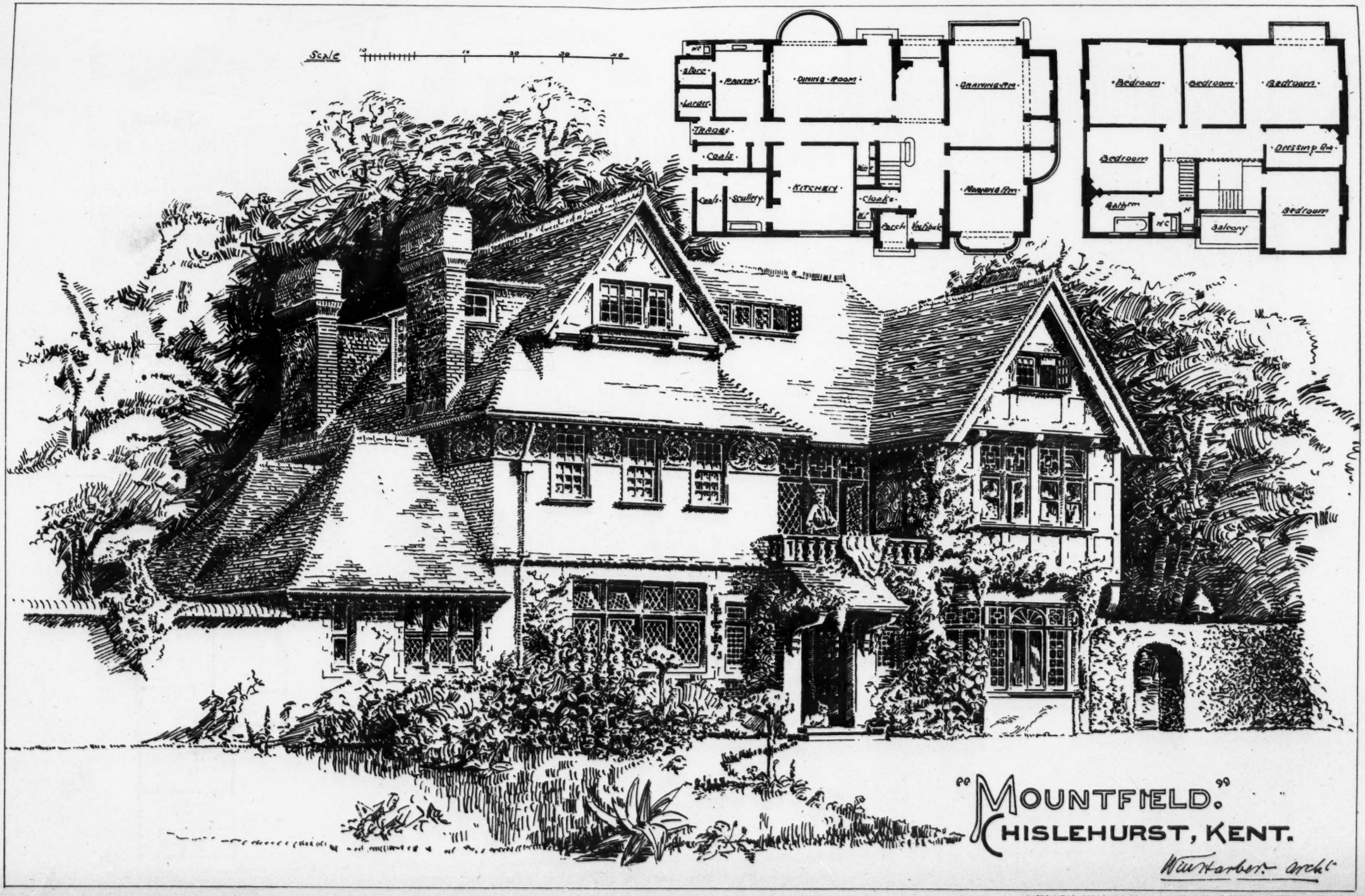

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